



EIBN Sector Reports

Agribusiness



2018

This Sector Report was created by the EIBN unit at:



Danish-Indonesian Business Chamber
(Dancham)

<http://www.dancham.id/>

Table of Contents

Table of Contents.....	3
Methodology	5
Executive Summary	6
I. Introduction	8
II. The Agribusiness Industry in Indonesia.....	9
1. Indonesian Government's Vision and Current Situation	9
2. Indonesia's Agricultural Production and Imports	10
3. Agribusiness Trade.....	15
3.1. Agribusiness within ASEAN.....	15
3.2. Agribusiness with the European Union.....	15
4. Consumption of Agribusiness Products in Indonesia	16
5. The Main Challenges of Indonesia's Agriculture	17
III. Horticulture and Food Crops	19
1. Demand and Trends.....	19
1.1 Horticulture.....	19
1.2 Rice Seeds and Seedlings	20
1.3 Fertiliser	21
1.4 Machinery	23
2. Key Players	24
2.1. Seedlings	24
2.2. Machinery	26
2.3. Fertiliser	26
IV. Livestock	27
1. Demand and Trends.....	28
1.1. Dairy and Dairy Products	28
1.2. Cattle Husbandry	32
1.3. Processed Meat	35
1.4. Abattoirs.....	36
1.5. Poultry.....	37
1.6. Vaccines and Medicine	39
2. Key Players	40
2.1. Feed.....	40
2.2. Dairy	41
2.3. Cattle and Feedlot.....	42
2.4. Vaccines and Medicines.....	43
V. National Policies and Relevant Regulations.....	44

1. Halal Regulation	44
2. Labeling	46
3. Agriculture	47
4. Livestock	49
5. Import Barriers	52
VI. Opportunities and Challenges	53
1. Challenges	54
1.1. Indonesian National Standards (Standar Nasional Indonesia, SNI)	54
1.2. Negative Investment List	55
1.3. Infrastructure Demand	55
1.4. Market Access	56
2. Opportunities	56
2.1. Indonesian Demographics	56
2.2. Changing Consumption Patterns	58
2.3. Sub-Sectors with High Potential for EU Companies	60
2.4. Linkages to Other Sectors	61
VII. Conclusion	62
Relevant Contacts	63
Resources	65
Trade Fairs in Indonesia	66
Abbreviations	67
References	70
About EIBN	79

Methodology

This sector report aims to highlight the potential of the agribusiness sector in Indonesia. It is an overview of business opportunities for European companies in the agribusiness sector, including information regarding market structure, key players, future trends, as well as potential opportunities and challenges.

In the preparation of this report, EIBN made use of a variety of sources and methods, which are briefly explained here. General information regarding the agribusiness industry was retrieved from publicly available sources, such as articles from the Jakarta Post, the Global Business Guide Indonesia, the Indonesian Commercial Newsletter, Gain USDA, the official website of the Indonesian Statistics Center (BPS), the Indonesian Investment Coordinating Board (BKPM), the Ministry of Trade, the Ministry of Industry, the Ministry of Agriculture, the World Bank, and the World Trade Organisation. Additionally, official homepages of certain companies have been used to provide a quick understanding of the companies' relevance within the market. Where it was appropriate and necessary, EIBN has taken into consideration the information gained from conducting interviews with government officials or officers of various business associations.

Sources for figures mentioned within retrieved images, tables and graphs were repeated in the text only where it is crucial for the understanding of the content.

This report has been developed using data available up until the third quarter of 2015.

Where the latest official data were not yet publicly available, this report referred to the latest data on hand. Other information provided was gathered from trade publications. All currency amounts in Indonesian Rupiah have been converted to US\$ using a rate of IDR 13,000 = US\$ 1.

To compile this report EIBN used its business intelligence and long-standing expertise in the Indonesian market, gained from its local network of five European bilateral chambers of commerce in Indonesia (BritCham, DanCham, EKONID, EuroCham, IBAI, and IFCCI).

Executive Summary

The purpose of the following report is to present an overview of the agriculture industry in Indonesia and to highlight potential opportunities for European businesses. The agriculture industry (in this publication referred to generically as agribusiness) is defined as collective business activities that cover the supply of agricultural inputs, the production and transformation of agricultural products and their distribution to the end consumer.

The agribusiness industry is a complex but highly relevant sector in the Indonesian economy. This important role is reflected in the sector's substantial contribution to the economy in terms of employment and Gross Domestic Product (GDP), with a contribution of 13.14% in 2017. This places agribusiness as the second biggest contributor to GDP after the manufacturing industry.

The agribusiness sector also remains one of the main industrial development priorities set by the Indonesian government, as well as an important sector for both foreign and domestic investments. In 2016, imports and exports of agribusiness products amounted to US\$ 15.84 billion and US\$ 26.73 billion respectively. Based on current data, the EU export value to Indonesia reached US\$ 773 million, a 4.6% growth rate from 2016 to 2017.

Indonesia mainly produces corn and soya beans. Despite local production, Indonesia still requires significant imports of these commodities in order to meet local demand. The growth in local consumption of packaged food is mainly driven by the increase in urbanisation, growing health awareness, and changing lifestyles.

One of the biggest challenges facing agriculture in Indonesia is the irrigation system, which needs to be improved urgently. The other challenges are the mechanisation and utilisation of agricultural machinery, and chemically irrigated farming land. Poor infrastructure remains a key challenge in Indonesian agriculture.

In Indonesia, dairy and beef cattle are mostly owned by small-scale farmers, who only raise livestock as a form of investment or savings. The Indonesian cattle population is mostly hand-fed with a mixture of grass, agricultural by-products, and added vitamins. Feedlots that allow cattle to freely feed on specified grass fields is limited, scattered, and exists only in certain areas. Indonesia imports breeding cattle, feeder cattle, live cattle, as well as frozen meat to fulfill its demand for beef. Poultry is still the most consumed meat in Indonesia and has the biggest market share for livestock. Day Old Chicks (DOC) and feed are two products that are mostly produced locally by major companies such as Japfa and Charoen Phokphand.

Future prospects and trends regarding the agriculture sector remain broadly positive for a number of reasons. Upward demand, coupled with a young, growing Indonesian population, is resulting in positive growth. In addition, increased urbanisation is also likely to support industry growth. Due to a rise in demands within the tourism and leisure sector, the consumption of food and beverages is expected to grow which will have a positive impact on agribusiness growth.

Challenges remain when conducting business in Indonesia. Firstly, it is important to take into consideration that cold storage facilities are not yet fully developed. Secondly, due to a dynamic regulatory environment, Indonesian provisions, laws and regulations related to agricultural trade and related sectors tend to change frequently, even those that have been recently issued.

Regulations that are particularly prone to frequent changes are regulations which are released by the National Agency of Food and Drug Control (BPOM), such as those related to Halal food.

In conclusion, the dynamic agribusiness sector in Indonesia remains promising and is driven by overall national growth, as well as changes in demographics and consumption patterns. However, challenges and weaknesses still remain in the industry.

I. Introduction

In a world of globalisation, many companies have been exploring international markets, especially those emerging markets that display prominent growth in terms of economy, population, and infrastructure. Agribusiness covers a wide range of subsectors including agriculture, livestock, fisheries, and forestry. This market study will cover both the supply and the production sides of the following agriculture subsectors: food crops, horticulture, and livestock (poultry and cattle husbandry). In this respect, the main objective of this market study is to provide an overview of the industry in Indonesia, while highlighting its existing opportunities and challenges for European companies.

Following a general overview of the industry, the study goes on to focus on each of the subsectors. In particular, it provides a closer look at the market structure, as well as the most relevant key players in the industry. Then analysis of future prospects and opportunities in the Indonesian market, as well as national policies and regulations, will provide European companies with insights into the future of operating in Indonesia from a long-term perspective. Finally, the report will explain the challenges that persist in the agriculture sector that companies will have to face when conducting business in Indonesia.

II. The Agribusiness Industry in Indonesia

1. Indonesian Government's Vision and Current Situation

The accelerated growth of the agriculture industry in Indonesia has been triggered by the government's goal to establish continuous, industrial food production, focusing on enhancing competitive capabilities, exports, food self-sufficiency and farmer prosperity¹. The agribusiness sector plays an important role in Indonesia. The table below shows that the agriculture sector contributed 13.14% to national GDP in 2017. The GDP contribution of this sector decreased slightly from 13.49% to 13.47% in 2015/2016. Despite this reduction in its contribution to GDP, the agribusiness sector still makes the second largest contribution to GDP after the manufacturing industry. Within the agribusiness sector, plantation crops is the biggest contributor by sub-sector at 3.47% in 2017, followed by food crops with 3.22%.

GDP at Current Market Price by Industrial Origin 2014-2017 (By Percent)

Industrial Origin	2014	2015	2016	2017
1. AGRICULTURE, LIVESTOCK, FORESTRY, AND FISHERY	13.34	13.49	13.47	13.14
a. Food Crops	3.25	3.45	3.43	3.22
b. Horticultures	1.51	1.51	1.51	1.44
c. Plantation Crops	3.77	3.52	3.46	3.47
c. Livestock and Livestock Products	1.58	1.60	1.62	1.57
d. Forestry	0.71	0.71	0.70	0.67
e. Fishery	2.32	2.51	2.56	2.57
2. MINING AND QUARRYING	9.83	7.65	7.18	7.57
3. MANUFACTURING INDUSTRY	21.08	20.99	20.51	20.16
4. BIG AND RETAIL SALES, CAR AND MOTORCYCLE REPAIRATION	13.43	13.30	13.18	13.01
5. CONSTRUCTION	9.86	10.21	10.38	10.37
6. TRANSPORTATION AND WAREHOUSE	4.42	5.02	5.20	5.41

Source: BPS Statistics Indonesia, 2018

¹ Ministry of Agriculture (2014), "Visi dan Misi", Available at: <http://www.pertanian.go.id/home/?show=page&act=view&id=5>

Based on the table below, agribusiness export values declined slightly from 2015 to 2016 while import value increased in the same period. Indonesian agricultural exports are dominated by estate crops, of which the four biggest subsectors are; palm oil, rubber, cocoa, and coffee. Between January to August 2017, the Indonesian balance of trade experienced a US\$ 10.98 billion surplus, with imports worth US\$ 22.18 billion and exports worth US\$ 11.20 billion. This surplus value was a 101% increase from the same period in 2016. BPS data released in 2017 which stated that the current value of agriculture commodity exports reached US\$ 298.5 million, a growth of 6.11% month by month, and 7.38% year on year.²

Agribusiness Trade in Indonesia

Subsectors	2015	2016
Export value (000 USD)		
Food crops	212,285	142,464
Horticulture	576,555	506,891
Estate crops	26,813,884	25,537,517
Livestock	443,433	543,292
TOTAL	28,046,157	26,730,164
Import value (000 USD)		
Food crops	6,789,739	6,498,553
Horticulture	1,460,649	1,780,426
Estate crops	3,306,411	4,373,505
Livestock	2,934,277	3,190,958
TOTAL	14,491,076	15,843,442

Source: Agribusiness Statistics, Ministry of Agriculture, 2017

2. Indonesia's Agricultural Production and Imports

Five out of seven agricultural products discussed in this section form part of the government's efforts to achieve self-sufficiency in food production by 2018. The products are rice, soya beans, corn, sugar cane, and beef. The rate of production for each of these commodities is increasing, with the exception of soya beans, which has been decreasing since 2015. Along with the development of the food self-sufficiency program, Indonesia has improved its food production, even though some rates of production are still unable to keep up with the demands of a growing Indonesian population. All the above commodities are also being imported in increasing numbers (based on data from 2015 and 2016), with the exception of corn. Corn production is increasing significantly as a result of the implementation of the self-sufficiency program, which has positive impacts on the feed industry.

² Budi. K (2018), "FAO Apresiasi Kinerja Kementan Memajukan Industri Pertanian", Kompas, 4th July 2018. Available at <https://ekonomi.kompas.com/read/2018/07/04/220548526/fao-apresiasi-kinerja-kementan-memajukan-industri-pertanian>

Production and Import of Food Agriculture Commodities in Indonesia

Production (in ton)					
Year	Rice	Soybean	Corn	Sugarcane	Beef
2015	75,398	963,183	19,612,435	454,170	506,661
2016	79,355	859,653	23,578,413	445,520	518,484
2017*	81,382	542,446	27,951,959	n.a	531,757
Import (in ton)					
Year	Rice	Soybean	Corn	Sugarcane	Beef
2015	505,310	2,256,932	3,267,694	3,472,012	50,309
2016	997,710	2,261,803	1,139,694	4,840,018	116,761

* 2017 are forecast figure for rice, soybean, corn, and sugarcane and preliminary figure for beef

Source: Statistics of Agriculture Products and Livestock/Veterinary, Ministry of Agriculture, 2017

Rice

Rice production is predicted to increase in 2018 and 2019 due to better yields, a reduction in pests and disease, and a larger area of harvest. The Ministry of Trade has authorised the import of 500,000 tonnes of rice, but the National Logistics Bureau (Bulog) has only imported 261,000 tonne in the first quarter of 2018. Prior to 2017, around 50-55% of rice production was concentrated in Java, with 85-90% of rice harvested from irrigated fields. On the second crop cycle other crops such as corn, soya bean, mung bean, peanut, and other secondary crops are planted³. This pattern is changed in 2017 and 2018 due to the lack of rainfall during the second cycle, which meant that farmers tended to plant more paddy rather than changing to secondary crops, resulting in higher rice production in 2017 to 2018.

Soya bean

Soya beans, as the raw materials of tempe (soya bean cake) and tofu, is a staple source of protein in Indonesia. This has motivated inclusion of the commodity in the self sufficiency program. The government has a target to add two million hectares of soya bean plantations across 20 provinces, with 500,000 hectares added during October to November 2017, with the remaining amount to be

³ McDonald.G and Meylinah.S (2018), Indonesia Grain and Feed Annual Report 2018, GAIN FAS. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Jakarta_Indonesia_3-29-2018.pdf

targeted for 2018.⁴ The Ministry of Agriculture has a target to increase production to 2.9 million tonnes in 2018, in order to fulfill the national demand of 2.4 million tonnes⁵.

Corn

Since 2016, the Ministry of Agriculture has made special efforts to increase national corn production and achieve self-sufficiency. Total corn production for 2017 is predicted to be 26 million tonnes, increasing 10.31% from the previous year's production. This has resulted in fulfilling both the demand for 8.5 million tonnes for the cattle feed industry and the 6 million tonne demand for the poultry feed industry.⁶ The Import Dependency Ratio has also reduced by 4.72% in 2017. Corn production is forecasted to improve by a minimum of 10% in 2018, but this is dependent on the intention of the Government of Indonesia to be self-sufficient.⁷

Sugarcane

The Government of Indonesia's self-sufficiency program includes sugarcane as one of the target commodities. Paradoxically, in 2017 the production of sugarcane decreased to 100 tonne per hectare on average and national production only reached 2.3 million tonnes in total. One reason for this is farmers' lack of access to non-subsidised fertilisers. In each planting season, sugarcane plantations require 350 tonnes of fertiliser, and the farmers need to purchase directly from the factory in order to obtain non-subsidised fertilisers.⁸ Beside the availability of fertilisers, other issues such as a reduction in the land area planted for sugarcane and the El-Niño weather system have also resulted in lower production in recent years. Total imports of sugar in 2016 were 3.4 million tonnes of cane sugar and 45,082 tonnes of molasses.⁹

Beef

Indonesia imports most of its breeding cattle, feeder cattle, and frozen beef from other countries, mainly Australia and New Zealand. The government allocated US\$ 34.6 million from the 2018 national budget for the procurement of 15,000 cattle, in order to boost local beef production.¹⁰

⁴ Hartomo. G (2018), "Swasembada Kedelai di 2018, Kementan Siap Tambah Lahan hingga 2 Juta Ha", Okezone, 3rd January 2018. Available at: <https://economy.okezone.com/read/2018/01/03/320/1839492/swasembada-kedelai-di-2018-kementan-siap-tambah-lahan-hingga-2-juta-ha>

⁵ Alfi. A.N (2017) "Pemerintah Pacu Produksi Kedelai Lokal", Bisnis Indonesia, 8th October 2017. Available at: <http://industri.bisnis.com/read/20171008/99/696957/pemerintah-pacu-produksi-kedelai-lokal>

⁶ Gideon. A (2017), "Produksi Terus Naik, Swasembada Jagung Bisa Terwujud Akhir 2017", Liputan6, 13th July 2017. Available at: <https://www.liputan6.com/bisnis/read/3021613/produksi-terus-naik-swasembada-jagung-bisa-terwujud-akhir-2017>

⁷ Manalu. J.E.R (2018), "Produksi Jagung 2018 Diperkirakan Naik 10%", Bisnis Indonesia, 4th February 2018. Available at: <http://industri.bisnis.com/read/20180204/99/734260/produksi-jagung-2018-diperkirakan-naik-10>

⁸ Winamo. A (2017), "Kementerian BUMN Targetkan Produksi Tebu Per Hektar Capai 100 Tonne", Kompas.com 15th November 2017. Available at: <https://ekonomi.kompas.com/read/2017/11/15/124000626/kementerian-bumn-targetkan-produksi-tebu-per-hektar-capai-100-tonne>

⁹ Based on preliminary data from the Directorate General of Plantations, Ministry of Agriculture. See *Indonesian Plantation Statistics: Sugarcane 2015-2017*. Available at: <http://ditjenbun.pertanian.go.id/tinymcpuk/gambar/file/statistik/2017/Tebu-2015-2017.pdf>

¹⁰ Kontan (2018), "Impor sapi bakalan bisa semakin turun", 30th June 2018. Available at: <https://industri.kontan.co.id/news/impor-sapi-bakalan-bisa-semakin-turun>

However, at the current time, national beef production is still not enough to fulfill demand. In order to close this gap, Indonesia has imported breeding cattle and frozen beef. According to BPS, beef imports from January to June 2017 reached 75,500 tonnes, worth US\$ 265.4 million, and beef cattle imports reached 71,300 tonnes, worth US\$ 230.8 million.¹¹

Cocoa

Indonesia is the third biggest producer of cocoa in the world after Ghana and Ivory Coast. Like the other agricultural commodities, small-scale farmers are the main contributor to national cocoa production; approximately 1.5 million hectares of cocoa plantations in Indonesia are managed by smallholders.¹² The major cocoa export is in the form of raw cocoa beans, which are then bought by other countries for further processing. Indonesia's cocoa industry has a capacity of 800,000 tonnes, yet current cocoa production amounts only to 226,000 tonnes. Cocoa imports reached their highest in 2017 at 200,000 tonnes.¹³ This is the lowest production of cocoa in Indonesia since 2010.¹⁴ The Government is expected to improve both the quality and quantity of cocoa production in order to meet its production capacity.

Palm Oil

The most consumed vegetable oil in Indonesia is palm oil, which is used for food, cosmetics, cleaning products, biofuel, and biodiesel. Global production of palm oil is dominated by Malaysia and Indonesia which produce 85-90% of the world's supply. Approximately 70% of palm plantations are located in Sumatra, while the remaining 30% are located in Kalimantan. Most palm oil production is for the export market, with only 20-25% for domestic use in food, chemical, detergent, soap and biodiesel production.¹⁵ Total palm production in 2017 was 41.98 million tonnes, an increase of approximately 6 million tonnes from 2016.¹⁶

¹¹ Kusuma. H (2017), "Ini Sederet Pangan yang Diimpor RI", Detik Finance, 3rd August 2017. Available at: <https://finance.detik.com/berita-ekonomi-bisnis/d-3584236/ini-sederet-pangan-yang-diimpor-ri>

¹² Indonesia Investments (n.d.), "Cocoa", Available at: <http://www.indonesia-investments.com/id/bisnis/komoditas/kakao/item241>

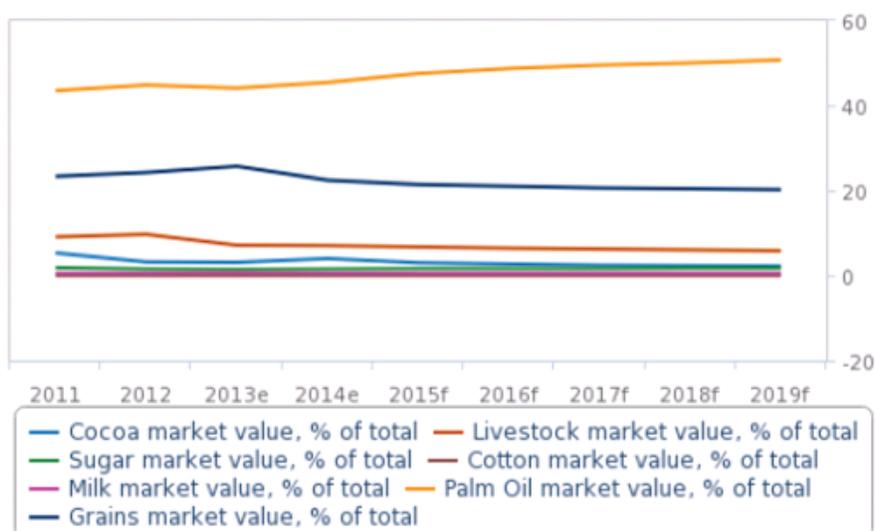
¹³ Hamdani. T (2018), "Produksi Kakao RI 400.000 Tonne/Tahun, Cukupkah untuk Industri?", Detik Finance, 9th February 2018. Available at: <https://finance.detik.com/industri/d-3858769/produksi-kakao-ri-400000-tonnetahun-cukupkah-untuk-industri>

¹⁴ Ratnasari. E.D (2018), "Cerita 'Pahit' di Balik Manisnya Cokelat", CNN Indonesia, 7th July 2018. Available at: <https://www.cnnindonesia.com/gaya-hidup/20180706184749-267-312123/cerita-pahit-di-balik-manisnya-cokelat>

¹⁵ GAPKI (2018), "Perkembangan Mutakhir Industri Minyak Sawit Indonesia". Available at: <https://gapki.id/news/3971/perkembangan-mutakhir-industri-minyak-sawit-indonesia>

¹⁶ Setiawan. S.R.D.S (2018), "Tahun 2017, Produksi Minyak Sawit Indonesia Naik 18 Persen", Kompas, 30th January 2018. Available at: <https://ekonomi.kompas.com/read/2018/01/30/160213126/tahun-2017-produksi-minyak-sawit-indonesia-naik-18-persen>

Market Value by Commodity (2011-2019)



Source: Business Monitor International (BMI) Research, Indonesia
Agribusiness Report, 2015

The Business Monitor International (BMI) study, above, suggests that palm oil constitutes the largest market share, reaching almost 50% in 2015. This is forecasted to grow to above 50% in 2019. The grains market value follows in second place, with around 20% of market share in 2015. Other commodities such as cocoa, sugar, milk, cotton, and livestock are forecasted to be smaller than 20% and remain stagnant until 2019.

BMI also forecasts that both consumption and production of agriculture products will increase in the next four years. For example, corn consumption will increase by around 28.7% to 15 million tonnes in 2019, due to the growing production capacity of the poultry feed industry in Indonesia. For sugar, BMI forecasts that production will increase by 32.5% to reach 3 million tonnes in 2018. Regardless of the increase in production, Indonesia will still be the biggest importer of sugarcane, mainly because the supply of cane from domestic producers cannot fulfill the huge local demand for sugar. Beef production is also forecasted to grow by around 14.3% and reach 686,000 tonnes in 2018, as a result of the Government's target and to meet national demand.¹⁷

¹⁷ BMI Research (2015), *Indonesia Agribusiness Report*, 19th October 2015. Available at: <http://store.bmiresearch.com/indonesia-agribusiness-report.html>

3. Agribusiness Trade

3.1. Agribusiness within ASEAN

The Association of South East Asian Nations (ASEAN) is becoming an integrated region, mainly driven by economic cooperation. The ASEAN Economic Community (AEC) was formally established on 31st December 2015, with the main objective to create a single market to stimulate ASEAN economic competitiveness. This includes the reduction of tariffs to zero on most products traded between member states, as well as the identification and removal of non-tariff barriers, including; product characteristic requirements, rules of origin and customs surcharges. Those measures are expected to free the flow of capital, goods and services, skilled labour, and raw materials among ASEAN member countries. At the time of writing, more than 85% of those trade liberalisation and facilitation measures have been accomplished.¹⁸

Almost all ASEAN countries produce rice as a main commodity. Rice fields make up 60% of agricultural land in Indonesia, Myanmar, Thailand, and the Philippines, while this rises to 90% in Cambodia and Laos. Indonesia and the Philippines are the two biggest rice exporters to the ASEAN market. Indonesia is also one of the biggest sugar exporters to ASEAN besides Thailand. Both countries have similar levels of production, but Indonesia has a lower yield at 7-8%. Indonesia is among the ten biggest producers of broiler poultry, but not for the export market. Malaysia and Thailand are the biggest poultry exporters to the ASEAN. For horticulture products, Thailand is the biggest rival for Indonesia, especially in fruits. Indonesia is one of the main exporters for palm oil, cacao, coffee and tea, but these are still exported as raw materials and require further processing if they are to maximise their economic benefit for Indonesia.¹⁹

The need to improve product competitiveness, as well as human resource development, is crucial preparation for ASEAN countries in order to achieve the goals of the AEC. However, this developing economic community will be an opportunity for all ASEAN member countries to further power their economies, as long as they can ensure the readiness of all participating parties.

3.2. Agribusiness with the European Union

EU-Indonesian trade in agricultural products remains at a stable rate of growth. EU import value from Indonesia rose by 28% from 2016 to 2017, to a total value of 5,297 million Euros. The biggest commodity imported by EU from Indonesia is palm and palm kernel oil, which accounts for 56.1% of total imports, followed by fatty acids and waxes with 18.3% of the total imports

The export value of agriculture products from the EU to Indonesia, as shown in the table below, rose by 4.6% from 2016 to 2017, contributing to the 14% increase from 2013 to 2017. The EU

¹⁸ KPMG International (2014), *ASEAN Economic Community 2015*, p. 8.

<https://www.kpmg.com/SG/en/IssuesAndInsights/ArticlesPublications/Documents/Tax-Itax-The-ASEAN-Economic-Community-2015.pdf>

¹⁹ Khudori (2016), "Pertanian Indonesia di Era Masyarakat Ekonomi ASEAN", GeoTimes, 18th January 2016.

Available at: <https://geotimes.co.id/tokoh/kolom-jokowi/pertanian-indonesia-di-era-masyarakat-ekonomi-asean/>

mostly exports dairy produce, tobacco and tobacco products, as well as miscellaneous edible preparations to Indonesia.

EU Trade with Indonesia on Agri-food Products, 2017 (in Millions of Euro)

Description	Value in 2017 (Million Euro)		Share in All Agri 2017 (%)		Change 2016-2017 (%)	
	Import	Export	Import	Export	Import	Export
Agri Food	5,297	773	100	100	28	4.6
Live Animals	1	2	0	0.3	n/a	0
Meat and edible meat offal	15	4	0.3	0.5	-16.7	33.3
Dairy produce	0	295	0	38.2	n/a	32.3
Products of animal origin	1	6	0	0.8	-50	50.0
Edible vegetables, roots, and tubers	1	15	0	1.9	n/a	-11.8
Edible fruits and nuts	71	4	1.3	0.5	16.4	33.3
Cereals	0	1	0	0.1	0	-97.4
Animal or vegetables fats & oils	3,235	21	61.1	2.7	29.6	5.0
Cocoa and cocoa preparations	120	13	2.3	1.7	-40.6	0
Coffee, tea, mate and spices	459	5	8.7	0.6	11.7	-37.5
Tobacco and tobacco products	137	50	2.6	6.5	2.2	38.9

Source: European Commission, *Agri-food Trade Statistical Factsheet EU-Indonesia, 2017*²⁰

4. Consumption of Agribusiness Products in Indonesia

According to the table below, the biggest monthly expenditure per capita in Indonesia in 2017, was prepared food at 17.15%, followed by tobacco and betel (5.88%) and cereals (5.39%). Most commodities show a slight decline in percentage in 2017, except spices and prepared food, which gained 0.08% and 1.84% respectively. Meat, vegetables, fruit, eggs and milk are all in decline, but not by a significant amount.

Percentage of Monthly Average per Capita Expenditure by Commodity Group

Commodity Group	Year		
	2015	2016	2017
Cereals	6.97	5.94	5.39
Tubers	0.52	0.53	0.52
Fish	3.68	3.71	3.58
Meat	2.22	5.08	4.60
Eggs and Milk	2.92	2.76	2.69

²⁰ European Commission (2017), *Agri-food Trade Statistical Factsheet EU-Indonesia, 2017*. Available at: https://ec.europa.eu/agriculture/sites/agriculture/files/trade-analysis/statistics/outside-eu/countries/agrifood-indonesia_en.pdf

Vegetables	3.19	3.75	3.28
Nuts	1.23	1.04	0.94
Fruits	1.82	2.52	2.00
Fats and oil	1.34	1.31	1.24
Spices	0.91	0.92	1.00
Tobacco and betel	6.79	6.15	5.88
Prepared food	16.18	15.31	17.15

Source: BPS Statistics Indonesia, 2018

Consumption increases by almost 10% during Ramadan; lower income consumers increase their spending by 30%, middle income by 15% and upper income by 13%. Employees receive a compulsory Ramadan bonus worth a month's salary, which stimulates spending. This period is often the key to reaching annual sales targets, as consumption during this period can contribute almost 45% to total food and beverage annual sales, especially for agri-food products.²¹

5. The Main Challenges of Indonesia's Agriculture

According to the Ministry of Agriculture, one of the biggest challenges for Indonesia's agriculture is irrigation and major improvements to existing systems are strongly required. Irrigation infrastructure in Indonesia has not been upgraded for more than 30 years, most systems are in poor condition and receive little maintenance. Approximately 3 million crop fields are poorly irrigated. The current government plans to build 65 reservoirs for irrigation purposes, among them are 16 old projects and 49 new projects. Today, reservoir-sourced irrigation only covers 10.5% of a total 7.1 million hectares of paddy fields. As many as 29 reservoirs are on course to be finished in 2019, with the remaining to be completed by 2022.²²

Another challenge is mechanisation, or the utilisation of agricultural machinery. Most Indonesian farmers are smallholders and lack an understanding of the importance of machinery in increasing crop production. Poor infrastructure, including roads, warehouses, and cold storage, also leads to loss and damage of post-harvest crops, the damage often reaching 30% to 50% of the total harvest.

Indonesia also faces problems with agricultural land, which has been affected by chemical residue from synthetic fertilisers. Farmers in Indonesia prefer synthetic fertilisers over the organic, as it delivers faster results. However, the only possible way for farmers to revitalise their land is to

²¹ Food Navigator-Asia (2011), "Look to Indonesia for Opportunities during Ramadan, says Nielsen", 31th Aug 2011. Available at: <http://www.foodnavigator-asia.com/Markets/Look-to-Indonesia-for-opportunities-during-Ramadan-says-Nielsen>

²² Simorangkir. E (2018), "Jokowi Bangun 65 Bendungan, Petani: Panen Bisa 2 Kali Setahun", Detik.com, 24th July 2018. Available at: <https://finance.detik.com/infrastruktur/d-4130168/jokowi-bangun-65-bendungan-petani-panen-bisa-2-kali-setahun>

learn and understand how to use organic fertilisers. This process takes around a year, but will surely improve the results.

Before Law 41/2009 on Protection of Sustainable Food Agriculture was introduced, the conversion of agricultural areas to industrial and residential purposes reached 100,000 hectares per year. Food self-sufficiency program slowly increased the total land area for agriculture, for example; wetland paddy fields in 2015 covered 8.09 million hectares and in 2016 this increased to 8.18 million hectares. These areas are recovering from the declining statistics of agriculture land use from 2012 to 2014.²³

The table below shows the Indonesian population over 15 years old, grouped according to business sector. More and more Indonesian families are changing their occupations from farming to other professions, such as manufacturing or trades and services, as these income streams are believed to be more stable than farming.

Indonesian Citizens over 15 Years Old According to Business Sector

Main Working Field	2015	2016	2017
Agriculture, Forestry, and Fishery	37,748,228	37,770,165	35,923,886
Mining	1,320,466	1,476,484	1,391,690
Manufactures	15,255,099	15,540,234	17,008,865
Electricity, Gas, and Water	288,697	357,207	393,873
Construction	8,208,086	7,978,567	8,136,636
Trade, Restaurant, and Accommodation	25,686,342	26,689,630	28,173,571
Transportation, Storage, and Communication	5,106,817	5,608,749	5,759,684
Financial Institution, Real Estate, Rental and Service	3,266,538	3,531,525	3,752,262
Civil Service, Social, and Individual	17,938,926	19,459,412	20,481,956

Source: BPS Statistics Indonesia, 2018

²³ Ministry of Agriculture (2019), *Agriculture Statistics 2017*. Available at: <http://epublikasi.setjen.pertanian.go.id/arsip-perstatistikan/160-statistik/statistik-pertanian/533-statistik-pertanian-2019>

III. Horticulture and Food Crops

1. Demand and Trends

The Indonesian government's efforts to achieve food self-sufficiency provides a promising opportunity in Indonesia. Due to the slowly developing quality of materials and technology, Indonesia is a big market for imported agricultural equipment and machinery.

1.1 Horticulture

Horticulture is a sector with great potential in Indonesia, but hard work needs to be done in order to maximise production. Despite the big population, Indonesia's average vegetable and fruit consumption is only 180 grams a day in 2018 which is far below the WHO's recommendation of 400 grams a day.²⁴ Like other subsectors in agribusiness, horticulture faces the same issues of land coverage. The planting area for the cultivation of fruit is only 32 m² per capita and 41.1 m² per capita for vegetables.

In 2018, having previously targeted staple food crops like rice and corn for self-sufficiency, the government shifted its focus to horticulture products. The government allocated a budget of US\$ 161.53 million for seedling production and dedicated 2018 to the "year of seedlings".²⁵ The Directorate General of Horticulture under the Ministry of Agriculture stated that the number of processing industries, as well as the use of local horticulture products, needed to be improved. The horticulture processing industry imports many of their raw materials from overseas.²⁶

Important players in the distribution network for horticulture products are farmers, traders, wholesalers, processors, transporters, and importers. Farmers sell their products to traders or wholesalers, who bring those products to the processors. The market chain can be shortened if the farm has a cooperation agreement with the processors, or if the manufacturer or the processor owns the farm.

Distribution channels are at the core of the market system. Although distribution channels, as well as supply and demand activities, are the main engine of the horticulture market system, other elements such as supporting functions and rules cannot be neglected. Those complementary elements should work together in order to maximise this industry. The market system shows that the five supporting actors; the government, the private sector, informal networks, business membership organisations, and the not-for-profit sector, perform and influence all activities in a complementary way. The biggest challenge in the development of the horticulture sector in

²⁴ Haryadi. M (2018), "Masyarakat Indonesia Masih Kurang Konsumsi Sayuran dan Buah", Tribun News, 24th April 2018. Available at: <http://www.tribunnews.com/kesehatan/2018/04/24/masyarakat-indonesia-masih-kurang-konsumsi-sayuran-dan-buah>

²⁵ Alfi. A.N (2017), "Hortikultura dan Perkebunan Jadi Fokus di 2018", Bisnis Indonesia, 30th May 2017. Available at: <http://industri.bisnis.com/read/20170530/99/657927/hortikultura-dan-perkebunan-jadi-fokus-di-2018>

²⁶ Subagyo (2015), "Industri pengolah hasil hortikultura minim", Antara News, 27th November 2015. Available at: <https://www.antaraneews.com/berita/531769/industri-pengolah-hasil-hortikultura-minim>

Indonesia is the regulatory environment, which can interfere with the main goal of self-sufficiency. For example, the Horticulture Law, which requires foreign investors to limit their investment only to 30%. This appears at odds with the government's stated focus on increasing foreign investment in Indonesia, as a way of motivating local production and increasing exports.

Fruit imports experienced a downturn in 2016, with an import share of just 2.35% of total fruit production. In 2017, the recommendation for fruit import was limited, especially for subtropical fruits such as apple, lemon, and oranges, which decreased 20-30% in volume. Lower price of local product is also the consideration for consumers to prefer local fruit than imported fruit.²⁷

There is also a market trend towards hydroponic products, the market share for hydroponic horticulture products increased from 10-20% in 2017. These products are mostly demanded by restaurants, hotels, supermarket, cafes, and third-party agents. The increasing demand for hydroponics is mainly caused by an increased awareness of healthier lifestyles amongst urban citizens, as well as the increasing number of expatriates working and living in Indonesia.²⁸

1.2 Rice Seeds and Seedlings

The main state-owned enterprise (SOE) working on seed procurement, PT. Sang Hyang Seri (SHS), enlarged their seedling cultivation both in Maros, South Sulawesi (from 500 hectares to 1,000 hectares) and in Kulon Progo, Yogyakarta (from 130 hectares to 500 hectares) in 2016. They used to provide mostly subsidised seeds, but in 2018 SHS no longer receives a subsidy from the government. As result, SHS increased their production of commercial seeds from 40% to 60%, and decreased their production of subsidized seeds from 60% to 40%.²⁹ SHS produces approximately 80,000 tonnes per year, but seed distribution is projected to decline, as the subsidy removal will affect the ability of SHS to procure seeds from cultivators.

Indonesia imported as much as 3,888 tonnes of ready-to-plant rice seeds between 2007 to 2014 and 1,000-1,500 tonnes from 2015 to 2016.³⁰ However, the National Nuclear Energy Board (BATAN) has developed two new varieties of rice seeds, known as 3S and Sidenuk, which have been widely used by Indonesian farmers. One of the provinces using these rice seeds is Semarang, where the seeds are cultivated as organic rice plants.³¹ The Government of Indonesia

²⁷ Yuniartha. L.K (2017), "Impor buah turun drastis tahun ini", 19th December 2017. Available at: <https://industri.kontan.co.id/news/impor-buah-turun-drastis-tahun-ini>

²⁸ Prasojo. M (2017), "Peluang Bisnis Sayuran Hidroponik dan Strategi Pemasarannya", Unsur Tani, 20th April 2017. Available at: <https://unsurtani.com/2017/04/peluang-bisnis-sayuran-hidroponik-dan-strategi-pemasarannya>

²⁹ Alfi. A.N (2017), "PASAR BENIH: Sang Hyang Seri Incar Segmen Komersial", Bisnis Indonesia, 5th December 2017. Available at: <http://industri.bisnis.com/read/20171205/99/715292/pasar-benih-sang-hyang-seri-incar-segmen-komersial->

³⁰ Villagers Post (2017), "EKSPEDISI PADI NUSANTARA: IMPOR BENIH PADI, IMPOR BENIH PENYAKIT", 16th April 2017. Available at: <http://villagerspost.com/special-report/ekspedisi-padi-nusantara-impor-benih-padi-impor-benih-penyakit/>

³¹ BATAN (2017), "Kota Semarang manfaatkan Padi Sidenuk untuk hasilkan Beras Organik", Available at: <http://www.batan.go.id/index.php/id/kedeputan/pendayagunaan-teknologi-nuklir/diseminasi-dan-kemitraan/3867-sidenuk-organik>

and the Bogor Agricultural Institute (IPB) are currently promoting six regions to cultivate 3S rice seeds throughout six provinces in the Sulawesi and Maluku Islands. The government has allocated US\$ 384,000 for seed procurement and seed teaching programs.³²

East West Seed is one of the biggest seed producers, with more than 150 varieties. To date, as many as 20 varieties of seed have been exported to Asian countries such as Japan, Singapore, the Philippines, Hong Kong, and India, amongst others.³³ National demand for horticulture seedlings has reached approximately 16,000 tonnes and local producers have produced 80% of it, while the rest is attained through imports. According to the Horticulture Seedling Production Association (Hortindo), the import of horticulture seedlings is not just to fulfil demand for seedlings, but also for quality development.³⁴

Indonesia stopped importing corn seeds at the end of 2017, because the Ministry of Agriculture considers that domestic production is able to satisfy demand. There are approximately 12 companies producing corn seeds, including Dupont, BISI, Syngenta, and Monsanto. These companies are mostly foreign-established, but the cultivators are local.³⁵

1.3 Fertiliser

Fertiliser production in Indonesia is dominated by the SOEs under the Pupuk Indonesia Holding Company (PIHC). Petrokimia, Sriwijaya, and Kujang are among the biggest SOE companies under PIHC that receive subsidies from the government to produce and distribute subsidised fertilisers to small holders.

The domination of SOEs can be found in the manufacturing of specific fertilisers containing materials that are obtainable in Indonesia, such as urea. SOEs do not focus on mixed compounds fertilisers with various nutrient types, but have doubled the production of single compound types instead. As the result, the Indonesian fertiliser market depends on imported products especially for mixed compound fertilisers. The variants NPK, KCL, ZA, and SP3 are only partially provided by domestic companies.

Local producers are still importing materials needed for the production of mixed fertiliser, because Nitrogen is the only substance provided in Indonesia while other substances, such as Potassium and Phosphate, are not. These two substances are only produced by certain countries.³⁶ Demand

³² Sindo (2018), "Pemerintah Kembangkan Startup Industri Benih", 16th Maret 2018. Available at:

<https://economy.okezone.com/read/2018/03/16/320/1873686/pemerintah-kembangkan-startup-industri-benih>

³³ Raharjo. B (2018), "Ewindo Targetkan Produksi Benih Hortikultura 4.700-an Tonne", *Republika*, 31st January 2018. Available at: <https://republika.co.id/berita/ekonomi/pertanian/18/01/31/p3ex9v415-ewindo-targetkan-produksi-benih-hortikultura-4700an-tonne>

³⁴ Ibid.

³⁵ Yunita. N.W (2017), "Kementan: Fokus Produk dalam Negeri, Tak Ada Impor Benih Jagung", *Detik.com*, 2nd November 2017. Available at: <https://finance.detik.com/berita-ekonomi-bisnis/d-3711445/kementan-fokus-produk-dalam-negeri-tak-ada-impor-benih-jagung>

³⁶ Amenan. A (2016), "Kebutuhan Pupuk Majemuk Akan Capai 3 Juta Tonne", *Berita Satu*, 3rd January 2016. Available at: <http://www.beritasatu.com/ekonomi/337637-kebutuhan-pupuk-majemuk-akan-capai-3-juta-tonne.html>

for mixed fertiliser is increasing after the demonstration conducted by the Ministry of Agriculture, meaning that the imports of raw materials for mixed fertilizer will also increase from time to time.

The government will also boost the production of mixed fertiliser to reduce the need for imports by establishing a Nitrogen Phosphorus and Potassium (NPK) cluster in Bontang and Lhokseumawe Aceh.³⁷ Development of an NPK facility capable of producing 2.4 million tonnes of NPK began in May 2018 and is targeted to finish in 2019 under the SOE companies, PT Pupuk Sriwidjaya, a branch of PIHC. Mixed fertilizers such as NPK and NPS will also be produced and distributed by PT Gresik Petrokimia, another branch of PIHC. Both SOEs are trying to close the national deficit for NPK in Indonesia, which is currently 3.9 million tonnes of the total demand of 11.1 million tonnes.³⁸

Fertiliser production under PIHC is considered inefficient as gas is a raw material for urea fertiliser and the current gas price is high. This condition is made worse by old facilities, which require more gas than newer ones. Average gas usage is 30 million British thermal units (MMBTU) per tonne, whilst gas costs US\$ 6 per MMBT.³⁹ Not only is PIHC the dominant company to produce fertiliser, as an SOE it has a public service obligation to deliver subsidised fertiliser to all areas of Indonesia.⁴⁰

Supply and Demand in Indonesia's Fertiliser Market (in tonnes)

Year	2017		2018 (Jan-Apr)	
	Production	Domestic Consumption*	Production	Domestic Consumption*
Urea	6,838,063	5,135,854	2,477,567	2,119,060
Phosphate/SP-36	480,131	796,903	174,601	365,474
ZA/AS	798,782	952,650	225,288	375,519
NPK	3,282,957	2,597,586	1,073,666	109,337
ZK (K ₂ SO ₄)	15,184	n/a	4,641	n/a
Organic	n/a	635,436*	n/a	250,643*

³⁷ Sulistiyono. S.T (2017), "Pemerintah Dorong Industri Pupuk Organik Lokal", Tribun News, 12 April 2017. Available at: <http://www.tribunnews.com/bisnis/2017/04/12/pemerintah-dorong-industri-pupuk-organik-lokal>

³⁸ Siregar.R.A (2018) "Pabrik Pupuk di Palembang Mulai Dibangun, Ditarget Kelar 2019", Detik Finance 11 Mei 2018. Available at: <https://finance.detik.com/industri/d-4015839/pabrik-pupuk-di-palembang-mulai-dibangun-ditarget-kelar-2019>

³⁹ Praditya.I.I (2017) "Harga Gas Mahal, Industri Pupuk di Indonesia Kalah Saing", Liputan6, 16th October 2017. Available at: <https://www.liputan6.com/bisnis/read/3130481/harga-gas-mahal-industri-pupuk-di-indonesia-kalah-saing>

⁴⁰ Rini.A.S (2017), "Ekspor Urea Hingga Oktober 2017 Mencapai 736.118 Tonne", Bisnis Indonesia, 3rd January 2018. Available at: <http://industri.bisnis.com/read/20180103/257/722691/ekspor-urea-hingga-oktober-2017-mencapai-736.118-tonne>

*The number comes from agriculture and estate crops only (without industry consumption)

Source: Indonesia Fertiliser Producers Association (APPI), 2018

National demand for mixed compound fertilisers has been growing and cannot be satisfied by SOE's supply, which only concentrates on the single compound types. This gap presents an opportunity for investors to enter the fertiliser market (especially for mixed compound fertilisers) in Indonesia.

In order to improve the production of mixed and organic fertiliser, the Government of Indonesia is planning to build organic fertiliser factories. The current government has developed a program of creating 1000 'organic villages' around Indonesia, to try and stimulate organic agribusiness through the use of organic fertilisers and biogas as a waste management solution.⁴¹ These organic villages are in 22 provinces throughout Indonesia, and managed by several directorates of the Ministry of Agriculture, but unfortunately due to the high cost-low profit production process of organic products, many farmers are hesitant about participating in the program.⁴²

1.4 Machinery

Based on our interview with the Ministry of Industry, 80% of Indonesian agricultural machinery is imported. Imported products are far cheaper than local products because the tariffs on imported raw materials to make the machines are between 2.5-5% higher than the tariffs on the machines themselves. To date, local components in the agricultural machineries reaches around 40%. The Indonesian technological mastery of the agricultural machineries is still on the medium to advance technology level.⁴³

Indonesia produces most of the components for agricultural machinery, but is still limited to low technical specifications only (especially plates-based components, cutting machines, and hummer mills). Core engine technology and engineering steel are two of the most needed raw materials which cannot be produced locally. Big steel companies in Indonesia such as Krakatau Steel only produce steel for construction and not for machines. The machinery steel market is dominated by Chinese exporters by offering competitive prices. In addition, Indonesia is still dependent on core engines from other countries, as Indonesian producers have no sufficient capacity to develop their own technology.

⁴¹ Kaber Indonesia (2014), "Kelola Sampah Dalam Program Jokowi-JK untuk Indonesia Go Organik", 3rd Oct 2014. Available at: <http://www.kabarindonesia.com/berita.php?pil=20&jd=Kelola+Sampah+Dalam+Program+Jokowi-JK+untuk+Indonesia+Go+Organik&dn=20140930103304>

⁴² Basith. A (2018), "Kemtan menggelar program 1.000 desa organik", Kontan, 19th Maret 2018. Available at: <https://industri.kontan.co.id/news/kemtan-menggelar-program-1000-desa-organik>

⁴³ Tubas Media (2017), "Penguasaan Teknologi Produk Alsintan Masih Relatif Terbatas", 24th January 2017. Available at: <http://www.tubasmedia.com/penguasaan-teknologi-produk-alsintan-masih-relatif-terbatas/#.W3Eufs4zbcS>

Types of agriculture in Indonesia may vary greatly from one area to another, causing each area to require different treatment. Companies must have a serious strategy to address this issue in order to enter the Indonesian market. The three biggest players in the Indonesian agricultural machinery market are dominated by the Japanese: Kubota, Yanmar, and Karya Hidup Sentosa. Kubota and Yanmar are Japanese companies, while Karya Hidup Sentosa uses Japanese core engines. Karya Hidup Sentosa is one of the biggest local agricultural machinery manufacturers in Indonesia and has been able to produce their own components. They have a 70% market share for hand tractors with their products named Quick.⁴⁴

In 2017, the government budgeted US\$ 223 million for machinery procurement including imported four-wheeled tractors and excavators, which are still not able to be produced locally. However, recently the Ministry of Agriculture has developed plans to boost national production of local agricultural machinery and has prepared a budget worth US\$ 538 million for machinery development until 2019.⁴⁵ The Research and Development department of the Ministry of Agriculture will develop the prototype for required machines and the government will cooperate with local private companies and SOEs to manufacture and distribute the products.⁴⁶

Pindad, an SOE that previously worked in the defense industry is currently entering the agricultural machinery industry with production of a combine harvester, a multifunctional four-wheeled tractor, and a seed planter. These products were previously imported as whole agricultural machines, whereas now Pindad plans to manufacture as many as 500 machines per year.

2. Key Players

2.1. Seedlings

PT DuPont Indonesia (Pioneer)

The company was established in 1988 and started to market its pioneer hybrid corn seeds in Indonesia within the same year. The company has released 23 varieties of hybrid corn in total. DuPont Indonesia also claims to be a pioneer of producing and distributing hybrid corn in Indonesia. DuPont Indonesia has a processing facility in Malang, East Java, which has an advanced seed conditioning machine. PT DuPont Indonesia recently released their new hybrid

⁴⁴ Ministry of Industry. *Kemenperin Pacu Daya Saing Industri Penopang Sektor Pertanian*. Available at: <http://www.kemenperin.go.id/artikel/18405/Kemenperin-Pacu-Daya-Saing-Industri-Penopang-Sektor-Pertanian>

⁴⁵ Alfi. A.N (2017), "Kementan Siapkan Anggaran untuk Dorong Produksi Alsintan di Tanah Air", *Bisnis Indonesia*, 5th May 2017. Available at: <http://industri.bisnis.com/read/20170505/99/651216/kementan-siapkan-anggaran-untuk-dorong-produksi-alsintan-di-tanah-air>

⁴⁶ Alfi. A.N (2017), "40 Perusahaan Mendaftar untuk Lisensi Alat Mesin Pertanian", *Bisnis Industri*, 24th August 2017. Available at: <http://industri.bisnis.com/read/20170824/99/683838/40-perusahaan-mendaftar-untuk-lisensi-alat-mesin-pertanian>

corn seeds; P36 Bekisar, which are resistant to a specific kind of fungi, has quick growth and high yield. The new seeds claim to possess a harvest potential of 9.6 to 13 tonnes per hectare.⁴⁷

PT Syngenta

PT Syngenta was established in Indonesia in 2001, as the result of a merger between PT Novartis Agribisnis and Agrokimia Zeneca. The products of PT Syngenta are seeds, fertilisers, pesticides, and other plant products. To date, the production capacity of the Syngenta seed factory is 8,000 tonnes per year with 40% utility. If genetically modified corn seeds can be introduced to Indonesia, then the factory will also be used for producing these seeds. In the future, the production site will also produce for export.⁴⁸

Cargill

Cargill's first business activities in Indonesia began with the establishment of a production factory in Bogor, West Java. Cargill Indonesia manages several agribusiness sectors; animal feed, sugarcane, cereals, vegetable oil, coconut oil, and cocoa. Each of those sectors has several factories; its animal feed unit alone has five factories in Medan, Semarang, Makassar, Pasuruan, Serang and Bogor. In 2017 Cargill expanded their business sector to include poultry, by establishing a joint venture with So Good Food, the Consumer Product Division of Japfa, called PT Cahaya Gunung Foods. Four months after establishing this joint venture, they have formed a partnership with McDonalds Indonesia by supplying several of their poultry products.⁴⁹

Monsanto Indonesia

Indonesia is the second largest market for Monsanto in Asia, with a market share of approximately 25%. Monsanto Indonesia owns 7,000 hectares of cornfield in Mojokerto, East Java. Monsanto's plant has the capacity to produce up to 13,000 tonnes of hybrid corn. Monsanto Indonesia plans to produce 8,000 tonnes of seeds in 2018, which is an increase of 33% from last year's production. They are collaborating with 6,000 farmers to produce the corn seeds and are planning to increase the number of partnerships.⁵⁰

PT. East West Seed Indonesia

PT. East West Seed was established in 1982 in the Philippines by Simon Groot, a Dutch agriculturalist who managed to adapt agricultural practices to conditions in Southeast Asia. PT. East West Seed Indonesia (EWINDO) became the first integrated seed breeding company in Indonesia, producing and selling hybrid vegetable seeds including tomatoes, peppers, and cucumbers, under the name of Cap Panah Merah. EWINDO released more than 150 varieties of

⁴⁷ Liputan 6 (2018), "Kenalkan Benih Jagung Tahan Jamur Bulai", 20th May 2018. Available at: <https://www.liputan6.com/regional/read/3531716/kenalkan-benih-jagung-tahan-jamur-bulai>

⁴⁸ Yuniartha. L (2018), *Syngenta Indonesia perkiraan utilitas pabrik tetap di 2018*, Kontan, 14th March 2018. Available at: <https://industri.kontan.co.id/news/syngenta-indonesia-perkiraan-utilitas-pabrik-tetap-di-2018>

⁴⁹ Cargill (2017), "Joint Venture (JV) Cargill – So Good Food dipilih oleh PT Rekso Nasional Food (McDonald's Indonesia) sebagai pemasok produk ayam di Indonesia", Cargill website, 23rd February 2017. Available at: <https://www.cargill.co.id/id/2017/joint-venture-jv-cargill-so-good-food-dipilih-oleh>

⁵⁰ Adventa. E (2017), "Monsanto memanen benih jagung", Kontan, 21st March 2017. Available at: <https://industri.kontan.co.id/news/monsanto-memanen-benih-jagung>

high quality seeds and has built a partnership with around 7,000 production farmers, more than 35,000 pollinators, and around 10 million commercial farmers. To date, EWINDO is the biggest producer of horticultural seeds in Indonesia and exports their seeds to several countries.

2.2. Machinery

PT Kubota Indonesia

Kubota Indonesia was established in 1972. Approximately 84% of the shares are held by Kubota Corporation in Japan and 16% by CV Karya Hidup Sentosa in Indonesia. The company employs 340 people. Kubota produces diesel engines which can be built into agricultural machinery, such as hand tractors, power threshers, and water pumps. Kubota Indonesia produces horizontal diesel engines, as well as generators, and distributes vertical diesel engines imported from Japan. With its 495 official dealers and 449 workshops, Kubota Indonesia produces engines and exports to more than ten countries around the world.

CV. Karya Hidup Sentosa

CV. Karya Hidup Sentosa (KHS) was first established in 1953 in Yogyakarta. This company produces agricultural machinery under the name of QUICK. KHS claims to be a market leader and exports to several countries. The agricultural machinery produced by KHS includes cultivators, combine harvesters, power threshers, and hand tractors. It has more than 400 dealers around Indonesia. KHS also established a joint venture with Kubota Corp. Japan to establish a factory in Semarang, Central Java.

2.3. Fertiliser

Saraswati Group

Saraswati Group began its business by producing mixed compound fertiliser in 1998, managing five business divisions; fertiliser, property, plantations, laboratories, and other businesses. There are several types of NPK fertiliser produced by Saraswati Group under the company's subsidiaries: PT. Saraswanti Anugerah Makmur and PT. Anugerah Pupuk Lestari produce NPK briquettes; PT. Dupan Anugerah Lestari produces granulated NPK; PT. Anugerah Dolomit Lestari and PT. Anugerah Dolomit Makmur produce dolomite fertilisers; PT. Anugerah Sarana Hayati produces liquid fertilisers; and PT. Arya Supra Nugraha, which acts as trading company for Saraswati Group's products. Saraswati Group is currently expanding its fertiliser factories to areas outside Java, and completed the first production of PT Anugerah Pupuk Makmur on February 2017. Saraswati is aiming to supply as much as 400,000 tonnes of NPK. This company contributes to 2-3% of the fertiliser market in Indonesia. This is projected to rise to 10% in the next five years.⁵¹

PT. Pupuk Indonesia Holding Company (PIHC)

⁵¹ Widarti. P, (2017), "Saraswanti Group Bakal Pasok Pupuk NPK 40000 Tonne", *Bisnis Indonesia*, 6th December 2016. Available at: <http://industri.bisnis.com/read/20161206/12/609640/2017-saraswanti-group-bakal-pasok-pupuk-npk-400.000-tonne>

PT. Pupuk Indonesia is a state-owned holding company that has several subsidiaries including, PT. Petrokimia Gresik, PT. Pupuk Kujang, PT. Pupuk Kaltim and PT. Pupuk Sriwidjaja. PT. Pupuk Indonesia was once named PT. Pupuk Sriwidjaja and was the first company to produce urea fertiliser in Indonesia. Pupuk Indonesia is the biggest fertiliser producer in Asia with total assets of US\$ 7.1 billion in 2015 and a total production capacity of 13.1 million tonnes a year. The range of fertiliser products from Pupuk Indonesia includes urea, NPK, ZK, ZA, and SP-36. PIHC has facilities located throughout Java, Sumatra, and Kalimantan. Pupuk Indonesia also has their own supporting facilities, such as ports, freighter ships, and their own storage facilities.⁵²

IV. Livestock

Beside the supply of livestock, Indonesia also requires know-how and transfer of technology on how to manage the overall livestock production. Below are statistics for livestock populations and foreign trade. The most common livestock are poultry and goats, reflecting the preference of small-scale farmers who tend to choose smaller animals. Livestock ownership across all types grew from 2016 to 2017, poultry with the greatest growth, followed by sheep, goats, and beef cattle. There are positive developments for import and export figures, as both are grew in volume and value in 2015 and 2016. These figures reflect the increase in demand for cattle, poultry, and other livestock products.

Livestock Population in Indonesia (in thousand heads)

Specification	2015	2016	2017*
Beef Cattle	15,420	16,004	16,599
Dairy Cattle	519	534	545
Buffalo	1,347	1,355	1,395
Horse	430	424	443
Goat	19,013	17,847	18,410
Sheep	17,025	15,717	16,462
Pig	7,808	7,903	8,138
Poultry	2,021,937	2,143,669	2,233,761

*Latest estimate

Source: Livestock and Veterinary Statistics, the Ministry of Agriculture, 2017

Foreign Trade in Livestock, Livestock Products, Veterinary Medicine, and Other Products in the Livestock Subsector 2015-2016

Measurement	Export		Import	
	2015	2016	2015	2016
Volume (in ton)	193,294	208,486	1,379,731	1,645,119

⁵² Pupuk Indonesia, "Sekilas PT Pupuk Indonesia (Persero)", n.d. Available at: <http://pupuk-indonesia.com/id/profile-pupuk-indonesia/sekilas-pihc>

Value (in thousand US\$)	443,433	543,292	2,934,277	3,190,958
-------------------------------------	---------	---------	-----------	-----------

Source: Ministry of Agriculture, 2017

1. Demand and Trends

The livestock subsector contributed 15.87% to GDP in 2017, a positive growth of 3.83% from the previous year. The demand for livestock is increasing due to the improvements in GDP per capita. The export volume of the livestock subsector also increased to 64.07% in 2017⁵³ and by 14.85% in value, making a total value of US\$ 623,9 million.⁵⁴

1.1. Dairy and Dairy Products

Indonesia's total annual milk consumption per capita is 16.62 liters, an increase from 11.09 liters in 2013.⁵⁵ This amount is still below the average consumption of other ASEAN countries such as Singapore, Malaysia, Thailand, and the Philippines, which average 20.58 liters.⁵⁶ However, the volume of Indonesia's milk consumption is expected to grow gradually due to increasing health awareness among middle to upper-income consumers. The demand for dairy products in Indonesia itself is expected to grow by approximately 5% annually until 2020.⁵⁷

The majority of dairy supply in Indonesia is used for industrial production; dairy supply for industrial purposes in 2017 reaches 911,437 tonnes. Meanwhile, direct dairy consumption is 249,875 tonnes, and for animal feed use is 123,151 tonnes, from the total consumption of 1,231,508 tonnes.⁵⁸ National dairy demand in 2016 reached 4.45 million tonnes. National production can only fulfill 852,952 tonnes, or 20% of demand, while the rest is satisfied by imported products.⁵⁹ Below is the chart of Indonesian top dairy imports:

⁵³ Reily. M (2017), "Berkontribusi Besar, Sektor Peternakan Ditargetkan Tembus Pasar Dunia", Kata Data, 4th July 2017. Available at: <https://katadata.co.id/berita/2018/07/04/berkontribusi-besar-sektor-peternakan-ditargetkan-tembus-pasar-dunia>

⁵⁴ Wilfridus S. *Mentan: Ekspor Daging Ayam Olahan Bukti RI Bisa Bersaing*. Liputan6 20 April 2018. Available at: <https://www.liputan6.com/bisnis/read/3471988/mentan-ekspor-daging-ayam-olahan-bukti-ri-bisa-bersaing>

⁵⁵ Ministry of Industry, *Konsumsi Susu Masih 11,09 Liter per Kapita*, n.d. Available at: <http://www.kemenperin.go.id/artikel/8890/Konsumsi-Susu-Masih-11,09-Liter-per-Kapita>

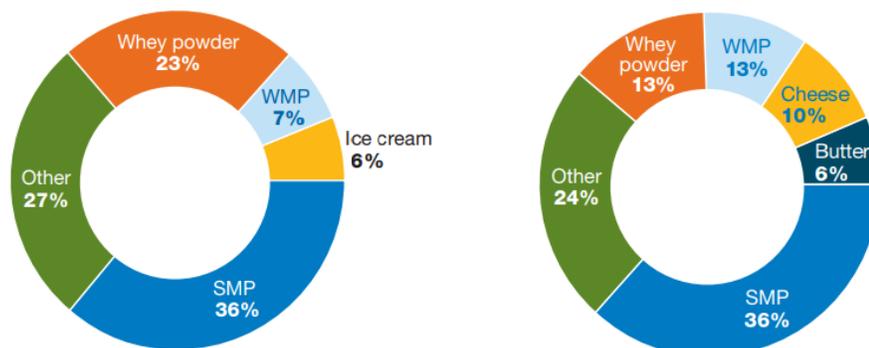
⁵⁶ Putri, A.W. Tirta 19 November 2017. *Peliknya Masalah Persusuan di Indonesia*. Available at: <https://tirta.id/peliknya-masalah-persusuan-di-indonesia-cAg7>

⁵⁷ Food Navigator-Asia (2014), "Fonterra breaks ground on its biggest SE Asia site", 26th Mar 2014. Available at: <http://www.foodnavigator-asia.com/Business/Fonterra-breaks-ground-on-its-biggest-SE-Asia-site>

⁵⁸ Ministry of Agriculture (2017), "Buletin Konsumsi Pangan Semester 2 2017", Data and Information System Center at Ministry of Agriculture. Available at: http://epublikasi.setjen.pertanian.go.id/epublikasi/buletin/konsumsi/2017/Buletin_Konsumsi_Pangan_Semester_2_2017/files/assets/basic-html/page69.html

⁵⁹ Sulistiyono (2017), "Industri Pengolahan Susu Sumber Peluang bagi Peternak Indonesia", Tribun News, 31st August 2017. Available at: <http://www.tribunnews.com/bisnis/2017/08/31/industri-pengolahan-susu-sumber-peluang-bagi-peternak-indonesia>

Indonesian Top Dairy Imports, by Volume (left) and by Value (right) in 2018



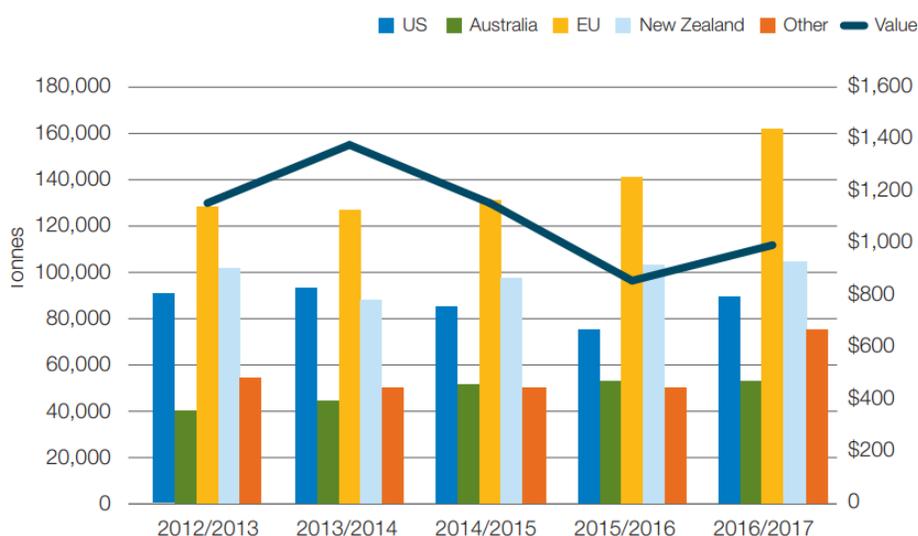
Source: Dairy Australia⁶⁰

The imported raw milk mentioned earlier includes non-fat dry milk (NFDM), whey, anhydrous milk fat (AMF), skimmed milk powder (SMP), ice cream and whole milk powder (WMP). NFDM and AMF imports are expected to decline slightly through 2018, while other imported dairy-based products will continue to grow. Demand for dairy based products is still price-elastic, meaning that dairy products will be at the bottom of daily needs priorities if there is general increase of the living cost. Milk itself is the exception to this case, due to the expanding middle-class demand for a high-quality protein source.

Dairy products are imported to Indonesia from a few selected countries; Australia, New Zealand, the United States, and European Union member countries. EU dairy imports to Indonesia have increased from year to year. Below is the list of top dairy exporters to Indonesia from 2012 to 2017:

⁶⁰ Dairy Australia (2018), *2018 Market Brief Indonesia*, March 2018. Available at: <https://www.dairyaustralia.com.au/-/media/dairyaustralia/documents/industry/industry-resources/latest-trade-exports/market-briefs-indonesia-march-2018.ashx>

Top Dairy Exporters to Indonesia



Source: Dairy Australia⁶¹

Packaged dairy products such as cheese, ready to drink milk, yoghurt and sour milk are gaining in popularity due to rising awareness of dairy's nutritional value. For example, cheese and yoghurt are believed to be a high source of calcium, and sour milk is believed to support the digestive system. According to Euromonitor data, popular processed dairy products in retail outlets in Indonesia are; processed cheese (cheddar and parmesan), fortified flavoured UHT milk drinks, fortified flavoured powder milk, condensed milk, and dairy-based drinking yogurt.⁶² Overall, retail sales of dairy products increased by 4.68% from 2015 to 2016, to 968,550 tonnes in volume and US\$ 2.161 million in value in 2016.⁶³

In 2017, cheese retail value grew at 15% due to the increasing incorporation of cheese in traditional Indonesian foods. Creative ways to enjoy cheese with other cuisines and the trend of culinary trips contribute to the promising future of cheese in Indonesian market. In 2017, drinkable milk products saw an 11% growth in retail sales value. There are many factors behind the growth of drinkable milk products, such as the emerging middle-class, increasing awareness of health and wellness, and information obtained through the media. Yoghurt and sour milk are also gaining in popularity due to growing health awareness. This growth is limited because it only applies to big cities with greater adaptation to Western tastes and those who have access to refrigerators or other cold storage facilities.⁶⁴

⁶¹ Ibid.

⁶² Fahwani. Y.R (2017), *Exporter Guide Update*, USDA FAS. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Exporter%20Guide_Jakarta_Indonesia_18-12-2017.pdf.

⁶³ Fahwani. Y.R (2017), *Retail Foods Update*, USDA FAS. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Retail%20Foods_Jakarta_Indonesia_26-12-2017.pdf

⁶⁴ Euro Monitor August 2017. *Dairy in Indonesia*. Available at: <https://www.euromonitor.com/dairy-in-indonesia/report>

Dairy production in Indonesia is mainly conducted by small scale farmers, who contribute to 77% of total fresh milk production. Milking is done by hand and then sold to cooperatives, which then distribute to buyers. The other 23% of fresh milk production is produced by a small group of modern dairy companies.⁶⁵ Due to the low price of dairy products in Indonesia, dairy farmers consider milk as a byproduct and each farmer has an average of just two to three milk-producing cattle. Some farmers sometimes slaughter dairy cattle for beef if they are in need of money. However, despite this, Indonesia's milk production rose steadily between 2014 and 2017 according to Ministry of Agriculture data below:

Total Dairy Production, 2014-2017

Milk Production	2014	2015	2016	2017
Volume (in ton)	800,749	835,124	912,735	920,093

Source: Ministry of Agriculture, 2018

Total milk production is estimated to continue growing in 2018, reaching 638 million liters. This will meet the demand for milk as a product in itself, but will also contribute to the production of whole milk powder, which is forecasted to reach 78 million tonnes in 2018. To note, Indonesia does not produce nonfat dry milk (NFDM).⁶⁶

Indonesian dairy cattle are mostly Friesian-cross cattle inseminated with imported frozen semen from Australia or New Zealand. Farmers feed their cows mainly on grass and additional feed, including industry waste (barley and soya bean). Total numbers of dairy cattle in Indonesia increased by 11,000 heads from 2016 to 2017, with a total population of 545,000 heads in 2017.⁶⁷ The area that produces the most fresh milk in Indonesia is East Java, which produced 501,325 tonnes of milk in 2017, increasing from 492,461 tonnes the previous year. The population of dairy cattle in East Java is higher compared to the other areas.⁶⁸

To increase dairy production, the Ministry of Agriculture has set a new regulation that instructs local milk processors to procure a certain amount of local milk and build their own milk processing units within 3 years after the regulation was issued. The Ministry of Agriculture Regulation No. 26/2017 also instructs importers and local milk processors to create partnerships with local farmers.⁶⁹

⁶⁵ Darmawan. B (2017), *Indonesia Dairy and Products Annual 2017*, GAIN, Report ID 1724. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Dairy%20and%20Products%20Annual_Jakarta_Indonesia_10-18-2017.pdf

⁶⁶ Ibid.

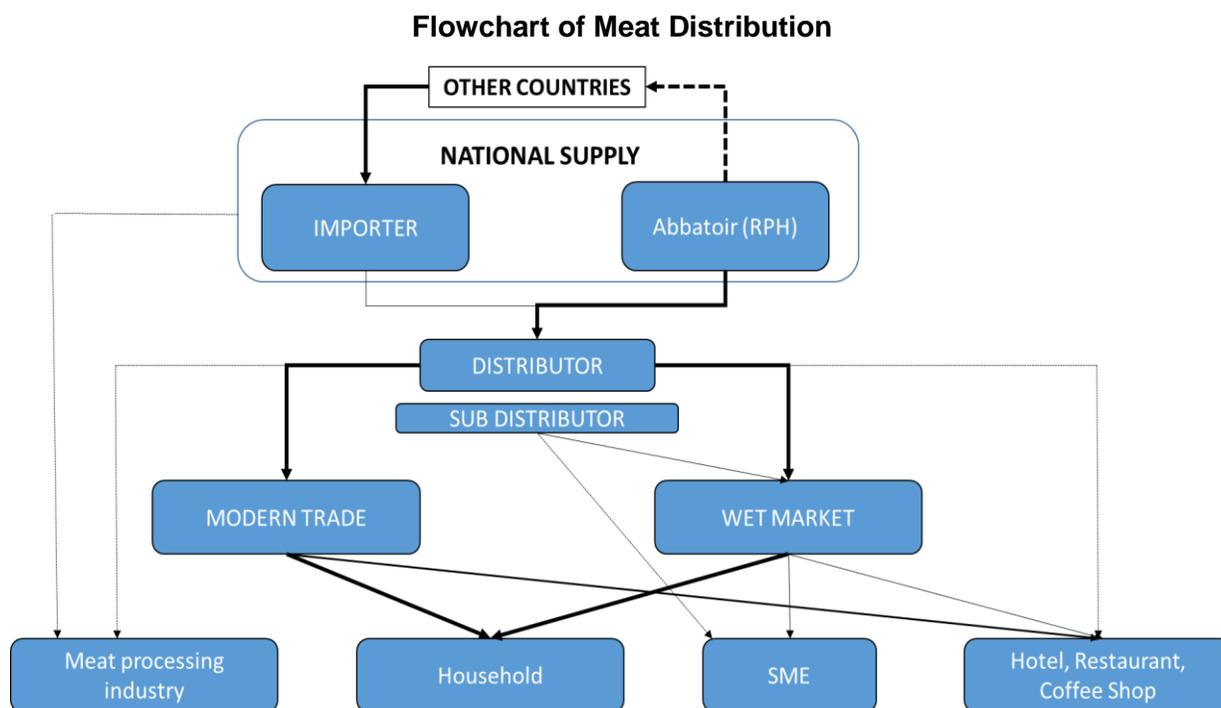
⁶⁷ Ministry of Agriculture (2017), *Livestock and Animal Health Statistics 2017*. Available at: [http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_\(ebook\).pdf?time=1505127443012](http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_(ebook).pdf?time=1505127443012)

⁶⁸ Central Bureau of Statistics (2017), *Dairy Cattle Population according to Provinces 2000-2016*. Available at: <https://www.bappenas.go.id/download.php?id=14936?id=14936>

⁶⁹ Ministry of Agriculture (2017), "Permentan 26/2017: Selain Wajib Serap Susu Lokal, Industri Wajib Bangun UPS". Available at: <http://industri.bisnis.com/read/20170904/99/686903/permentan->

1.2. Cattle Husbandry

Based on a study by the Australian Center for International Research, cattle fattening in Indonesia is differentiated into three types; small to medium cattle farmers, cattle fattening farms, and corporate feedlots. The majority of cattle fattening is done by small to medium cattle farmers, with two to three heads of cattle on average, which are fed by hand, or graze on open fields. Corporate feedlots were pioneered by Great Giant Livestock (GGL), operating under the Gunung Sewu Group, using imported feeder cattle from Australia. The weight of feeder cattle before entering the farm is between 200-350 kilograms and the cattle are ready for slaughter at 400-600 kilograms.⁷⁰



Source: APFINDO, 2016

Above is a flowchart of national meat distribution in Indonesia, the bold arrow denotes common flow and the thin arrow denotes the available flow only with low quantity. Meat supplies come from both abattoirs and importers to fulfill national demand. The flow continues to distributors and sub-distributors. Distributors distribute to two markets of consumers; modern trade and wet markets. Sub-distributors then distribute to wet markets and Small Medium Enterprises (SME). Modern trade is the source for households and hotel, restaurant, and coffee shop consumers, while wet markets are mainly for household consumers.

In order to increase the cattle population in Indonesia, current regulations⁷¹ require the import of one female cattle for every five heads of feeder cattle for companies, and a ration of one to ten

⁷⁰ Australian Center for International Agricultural Research (2002), *Improving Indonesia's Beef Industry*, ACIAR. Available at: <http://ageconsearch.umn.edu/bitstream/114076/2/mn95.pdf>

⁷¹ Ministry of Agriculture Regulation No 2/2017, a revision of Regulation No 49/2016

for cattle cooperatives.⁷² This regulation is considered a burden for Indonesian feedlot companies as cattle breeding is not as promising as the feeding industry. In the National Budget for 2018, the Government of Indonesia allocated US\$34.6 million for the procurement of 15,000 female cattle. According to the Director-General of Farming and Animal Health, national demand for beef is around 650,000 tonnes per annum. As a consequence, total imports of feeder cattle only reached 161,784 heads by June 2018, while it was 209,503 heads for the same period the previous year.⁷³

Total beef production, according to BPS, was 354,770 tonnes in 2017, while total demand is 604,968 tonnes. The gap between national supply and demand is filled by imports, both in form of breeding cattle and beef. In 2018, the Ministry of Agriculture predicted that beef production would be 403,668 tonnes with a national demand of 663,290 tonnes.⁷⁴ The population of beef cattle in 2017 was 16,599,000, according to statistics from the Ministry of Agriculture.⁷⁵ The number of breeding cattle imports from January to April 2018 was 127,637 heads, which was lower than the same period during 2017, which was 141,935 heads.⁷⁶

Since 2017, the Ministry of Trade no longer applies an import quota on beef, with import barriers now managed by the Ministry of Agriculture through import recommendations. Fresh, chilled beef imports are mainly to stabilise domestic market prices. In order to get import permission (*Persetujuan Impor*, PI) specifically for fresh chilled meat, the highest market price (HET) should be IDR 80,000 (US\$ 5.92) per kilogram. However, this obligation does not apply for premium beef. The majority of imported non-processed meat is in the form of frozen meat (HS 0202), with total imports of 102,484 tonnes in 2017, while fresh, chilled meat (HS 0201) imports only reached 3,651 tonnes.⁷⁷

⁷² Alfi. A.N (2017), "WAJIB IMPOR SAPI INDUKAN: Industri Penggemukan Tertatih", *Bisnis Indonesia*, 12th December 2017. Available at: <http://jakarta.bisnis.com/read/20171212/452/717329/wajib-impor-sapi-indukan-industri-penggemukan-terlatih>

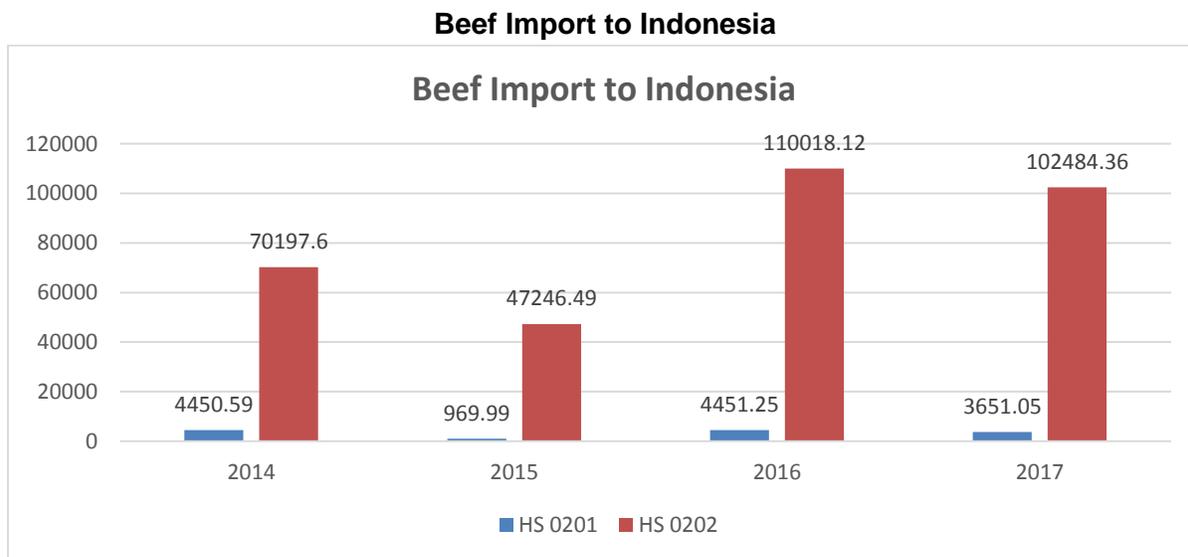
⁷³ Kontan (2018), "Impor sapi bakalan bisa semakin turun", 30th June 2018. Available at: <https://industri.kontan.co.id/news/impor-sapi-bakalan-bisa-semakin-turun>

⁷⁴ Reily. M (2018), "Kemendag Terbitkan Izin Impor 36 Ribu Tonne Daging Sapi", *Kata Data*, 22nd February 2018. Available at: <https://katadata.co.id/berita/2018/02/22/kemendag-terbitkan-izin-impor-36-ribu-tonne-daging-sapi>

⁷⁵ Ministry of Agriculture (2017), *Livestock and Animal Health Statistics 2017*. [http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_\(ebook\).pdf?time=1505127443012](http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_(ebook).pdf?time=1505127443012)

⁷⁶ Kontan (2018), "Realisasi impor sapi bakalan tergerus", 14th December 2018. Available at: <http://nasional.kontan.co.id/news/realisasi-impor-sapi-bakalan-tergerus>

⁷⁷ Hanung & Asmara (2018), "Kemendag Terbitkan Izin Impor Daging Sapi dan Kerbau", *CNBC Indonesia* 22nd February 2018. Available at: <https://www.cnbcindonesia.com/news/20180222143103-4-5133/kemendag-terbitkan-izin-impor-daging-sapi-dan-kerbau>



Source: CNBC, 2018

A regulation issued by the Ministry of Agriculture in early 2017 allowed buffalo meat to enter the Indonesian market in order to lower the price of processed meat in Indonesia. Previous regulations regarding beef, issued in 2016, also relaxed import regulations by allowing secondary cuts to be imported in order to stabilise the beef market price.

With an annual average beef consumption of 2.9 kilograms per capita in 2017, Indonesian consumption is still considerably lower than its counterparts within ASEAN.⁷⁸ But, if the denominator of total consumption is the commodity consumer cluster (and not total population), as recommended by the Indonesian Center for Animal Research and Development (Balai Penelitian dan Pengembangan Peternakan), total consumption would be higher.⁷⁹

According to FAO data, total Indonesian beef consumption will reach 661.8 tonnes in 2019, which has steadily increased from year to year since 2011. Increasing beef consumption will cause a rise in beef imports, especially if local production remains low. The FAO predicts that total frozen beef imports will reach 332,000 tonnes in 2019, which would be 110% higher than the volume in 2013. This is different for offal imports, which are projected to decline by 47% from the volume in 2013, with only 18,000 tonnes imported in 2019 due to health quality and the halal status of the products.⁸⁰

⁷⁸ Tempo (2017), "Menteri Perdagangan Bicara Soal Konsumsi Daging Indonesia 2,9 Kg", 29th April 2017. Available at: <https://bisnis.tempo.co/read/870606/menteri-perdagangan-bicara-soal-konsumsi-daging-indonesia-29-kg>

⁷⁹ Tjeppey. D.S (2013), "Partisipasi Konsumsi Sebagai Alat Ukur Status Ketahanan Pangan Daging", Wartazoa, Vol 23 No 4, 2013. Available at: <http://download.portalgaruda.org/article.php?article=278123&val=7169&title=Participation%20Rate%20as%20A%20Basis%20for%20Measuring%20Food%20Security%20Status%20of%20Meat>

⁸⁰ Ministry of Trade (2017), *Food Outlook Analysis*, Ministry of Trade of Indonesia. Available at: http://bppp.kemendag.go.id/media_content/2017/08/Analisis_Outlook_Pangan_2015-2019.pdf

It should be noted that on special holidays, consumption and price patterns become irregular. Sales increase by 50-100% before Idul Adha (the Islamic Feast of the Sacrifice) in some area, because people sacrifice livestock such as cattle, goats, or sheep. According to APFINDO, the price of beef and related products struggles to stabilise after this season and other demand surges, due to the domestic supply gap and constant increasing demand.

Changing consumption trends, motivated by increased income in Indonesia, has created a market for premium beef, such as wagyu. Ministry of Agriculture data shows that consumption of premium beef accounts for 10-15% of total beef consumption in Indonesia and the volume of premium beef represents 143,700 tonnes of the 950,000 tonnes of total demand.⁸¹

1.3. Processed Meat

According to the National Meat Processor Association of Indonesia (NAMPA), imported processed meat is still considered as the main source for industry purposes =. In the chicken meat sector, local meat can only fulfil the demand for whole chickens with bones. Processing industry prefers Mechanical Deboned Meat (MDM), which is rarely provided by local sources. For beef, the processing industry usually uses the Fore Quarter (FQ) 85 (with 15 percent fat) or FQ 65 (with 35 percent fat) or blade cuts. Several challenges faced by the processing industry in the purchasing of raw meat from the local farmers include; lack of product standardisation, lack of cold chain facilities, lack of bonafide suppliers, and low quality.⁸²

The processed meat market in Indonesia is growing due to an increase in the snack market and a preference for convenience.⁸³ Indonesia has the biggest growth in the processed meat market amongst developing countries. Growth from 2011 to 2015 reached 26.7% in Indonesia, followed by India at 22% and Vietnam at 15.5%. It is estimated that the 2016 market value was US\$1.2 billion, according to a Mintel report published in April.⁸⁴ Processed meat and seafood is forecasted to grow by 6.82% from 2015 to 2020.

Processed meat from Indonesia has entered the Australian market through instant noodle products. Indonesia has the biggest processed food market in Australia among ASEAN countries with 7.67% of the total market.⁸⁵ Besides Australia, 6,696kg of processed poultry meat from Indonesia entered the Japanese market through Charoen Phokpand products.

⁸¹ Kanal (2017), "Untung Maksimum Dari Daging Premium", 14th October 2017. Available at: <http://validnews.co/Meraup-Untung-Maksium-Dari-Daging-Premiun-wRN>

⁸² National Meat Processors Association (NAMPA). "Pokok Permasalahan NAMPA". Available at: <http://www.nampa-ind.com/index.php/component/content/article?id=49:pokok-permasalahan-nampa>

⁸³ Valenta. E (2017), "Rakyat Indonesia Senang Nyemil, Industri Olah Daging Tumbuh", CNN Indonesia, 24th April 2017. Available at: <https://www.cnnindonesia.com/ekonomi/20170424162025-92-209779/rakyat-indonesia-senang-nyemil-industri-olah-daging-tumbuh>

⁸⁴ Sari. S.M (2017) "RI Jadi Pasar Daging dan Ayam Olahan dengan Pertumbuhan Tercepat", Bisnis Indonesia, 24th April 2017. Available at: <http://industri.bisnis.com/read/20170424/99/647620/ri-jadi-pasar-daging-dan-ayam-olahan-dengan-pertumbuhan-tercepat>

⁸⁵ Antara News (2017), "Produk daging olahan Indonesia tembus Australia", 19th December 2017. Available at: <https://www.antaraneews.com/berita/672024/produk-daging-olahan-indonesia-tembus-australia>

In 2016, Indonesia imported 5,640 tonnes of processed meat, such as meatball and sausage (HS 1601), according to UN Comtrade data. The amount of processed meat imports increased steadily by 3.12% in volume from 2012 to 2016. Popular processed meat in Indonesia includes processed poultry (sausages, chicken nuggets, seasoned chicken wings), frozen processed beef (meatballs, sausages, beef patties), and corned beef.⁸⁶

During Ramadan, food demand slightly increases and is the period with the highest meat consumption during the year. Processed meat products, such as sausages and meatballs, experience a 34% growth. Canned fish and meat increases to 119% due to the popularity of faster meals during fasting month.⁸⁷ The processed meat business is fascinating, not only in terms of income improvement, but also of its effect on Indonesian urban lifestyles, which are becoming increasingly mobile and busy.

1.4. Abattoirs

There are at least two types of abattoirs in Indonesia; those that belong to the government and those that belong to private businesses. Some government abattoirs are profit-oriented and some are not, but all government abattoirs provide a kill-only service without further processing. Meanwhile, private business abattoirs buy and sell live animals, as well as process them.⁸⁸ Slaughterhouses in Indonesia are mostly owned by small-scale private owners and rarely comply with minimum hygiene and technological standards. Most butchers prefer small slaughterhouses rather than the medium-scale abattoirs, despite medium-scale abattoirs being well equipped with modern technology. This is due to the lower service costs of small-scale slaughterhouses and their convenient locations for butchers. According to Ministry of Agriculture statistics, there are 1,157 livestock and poultry slaughterhouses (RPH and TPH⁸⁹) in Indonesia, 561 of these are located in Java.

Below is the number of registered livestock that are slaughtered. The table below shows that the number of livestock slaughtered fluctuates slightly, some animals see an increase in numbers such as goat and pig in 2017, while the rest is lower than its number in 2016.

⁸⁶ Op.cit. USDA GAIN.

⁸⁷ Ibid.

⁸⁸ Purba. H.J (n.d.) "The Dynamics of Beef Supply Chain in Indonesia", Indonesian Center for Agricultural Socio Economic and Policy Studies. Available at: <http://pse.litbang.pertanian.go.id/eng/index.php?limitstart=42>

⁸⁹ RPH refers to registered slaughterhouses and TPH refers to any place (with or without a building) which offers slaughter services.

Registered Livestock Slaughtered (thousand head), 2015-2017

Species	Year		
	2015	2016	2017
Beef Cattle	2,175	2,151	2,170
Buffalo	143	127	126
Goat	1,919	2,110	2,191
Sheep	990	1,149	1,066
Pig	2,033	2,136	2,171
Horse	13	16	16

Source: Livestock and Veterinary Statistics, Ministry of Agriculture, 2017

Medium-scale abattoirs, equipped with modern technology, mainly process imported breeding cattle (often from Australia) that are fattened locally. They are mostly automated but still are relatively small in quantity compared to the small abattoirs. Meanwhile, the small-scale private abattoirs have minimal hygiene, low quality technology and low animal welfare standards.

In the FAO's 2008 report, only 19% of all abattoirs in Indonesia comply with minimum hygiene requirements and provide appropriate technology for producing high-quality meat.⁹⁰ The technology gap in the abattoirs (in addition to the shortage of local cattle) contributes to the inability of domestic production to meet growing demand. Therefore, it is crucial for Indonesian authorities to concentrate on regulations that aim to upgrade slaughterhouses' technology and infrastructure.

1.5. Poultry

Poultry is the top protein source in Indonesia, with 67% of total Indonesian meat production coming from poultry meat. For the years ahead the poultry meat production will be seeing a positive outlook. Total native and broiler production and consumption is displayed in the table below:

Production and Consumption of Native and Broiler Poultry, 2015-2017

	Production (ton)			Consumption/capita (kg)	
	2015	2016	2017	2015	2016
Native	299,773	284,988	269,189	0.626	0.626
Broiler	1,628,307	1,905,497	1,848,061	4.797	5.110

⁹⁰ FAO (2008), *Abattoir Development - Recommendations: Indonesia Overview*, 2008. Available at: <http://www.fao.org/docrep/010/ai410e/AI410E08.htm>

Source: Livestock and Veterinary Statistics, Ministry of Agriculture, 2017⁹¹

The domestic consumption, for both direct consumption and the food industry, is projected to increase by 5.68%, or 859,820 tonnes on average from 2018 to 2021. Total consumption in 2018 is estimated to reach 1.3 million tonnes, with production of 2.3 million, providing a surplus of 1 million tonnes. For the next four years (2018 to 2021), surplus production of poultry meat will grow by an average of 4.9% each year.⁹² However, this outlook needs to be balanced with the growth of poultry industry competitiveness, as the production and logistics cost in this industry is still high and productivity is still low.

Indonesia imported 36,000 DOC early in 2018 to boost DOC production. The Government of Indonesia has set a target to produce 2.8 million Parent Stock and approximately 400 million Full Stock in upcoming years.⁹³ During Ramadan 2018, DOC stock in Indonesia was enough to fulfill the 266,220 tonnes of poultry meat demand and even create a meat surplus of 45,232 tonnes. The price of live birds was also considered stable and profitable to the farmers in Ramadan 2018 compared to the price in Ramadan 2017, where the country saw an imbalance between demand and supply.⁹⁴

In 2018, egg prices remained high, even after the Ramadan ended, which is unusual. The Ministry of Agriculture claims that this price anomaly is caused by decreasing productivity, due to extreme weather and the farm workers' long holiday during the fasting month. This price anomaly also relates to increased production costs caused by the devaluation of the Rupiah against the US Dollar in the last few years. Egg prices increased by 27% from the standard price before Ramadan in July 2018.

Corn is crucial for the poultry industry as it constitutes 83% of animal feed and 35% constitutes of the overall feed production cost. Based on Ministry of Trade regulation Number 20/2016, the import of corn for poultry and livestock feed is conducted solely by the SOE, BULOG, while other importers and producers can only import corn for food, or industrial raw materials. Corn imports are estimated to decline from 1.8 to 0.5 Million Metric Tonnes (MMT) from 2016/2017 to 2017/2018, due to a corn self-sufficiency program. The total harvested area is also estimated to increase to 3.45 million hectares in 2017/2018.⁹⁵

⁹¹ Ministry of Agriculture (2018), *Livestock and Animal Health Statistics 2017*, Ministry of Agriculture, Indonesia.. Available at: [http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_\(ebook\).pdf?time=1505127443012](http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_(ebook).pdf?time=1505127443012)

⁹² Gumilar. P (2018), "Produksi Ayam Ras Diprediksi Surplus Sampai 2021", *Bisnis Indonesia*, 18th April 2018. Available at: <http://industri.bisnis.com/read/20180418/99/785913/produksi-ayam-ras-diprediksi-surplus-sampai-2021>

⁹³ Gumilar. P (2018), "Kementan: Impor Bibit Ayam untuk Cadangan", *Bisnis Indonesia*, 5th March 2018. Available at: <http://industri.bisnis.com/read/20180305/99/746192/kementan-impor-bibit-ayam-untuk-cadangan>

⁹⁴ Gumilar. P (2018), "*Jelang Ramadan dan Lebaran, Pasokan Ayam Dipastikan Aman*", *Bisnis Indonesia*, 22nd April 2018. Available at: <http://industri.bisnis.com/read/20180422/99/787322/jelang-ramadan-dan-lebaran-pasokan-ayam-dipastikan-aman>

⁹⁵ Wright. T (2017), *Indonesia Grain and Feed Annual Report 2017*, GAIN Report ID1707. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Jakarta_Indonesia_3-30-2017.pdf

1.6. Vaccines and Medicine

Animal vaccines and medicines are already being exported globally, although most are basic products. Based on our interview with the Head of the Indonesia Veterinary Drugs Association (ASOHI), Indonesia has exported several animal medicine products to 37 other countries. However, most of the raw materials for these medicines are imported.

The industry players are not interested in producing raw materials, even though resources to produce such raw materials can be sourced domestically, since it is not economical for them. Indonesia imports almost 80% of its raw materials for vaccines, pharmaceuticals, and other drugs. Most of the raw materials for pharmaceuticals are sourced from China and India, while raw materials for the vaccine industry are imported from European countries like Germany, France, and the Netherlands.

Several end products, such as vaccines for certain diseases (e.g. chicken anemia), certain bacteria (e.g. salmonella) and innovative animal drugs, are products that are domestically in high demand, but are not produced locally. However, there is a current decreasing trend of importing raw materials (preparations and premix), as seen in 2016.

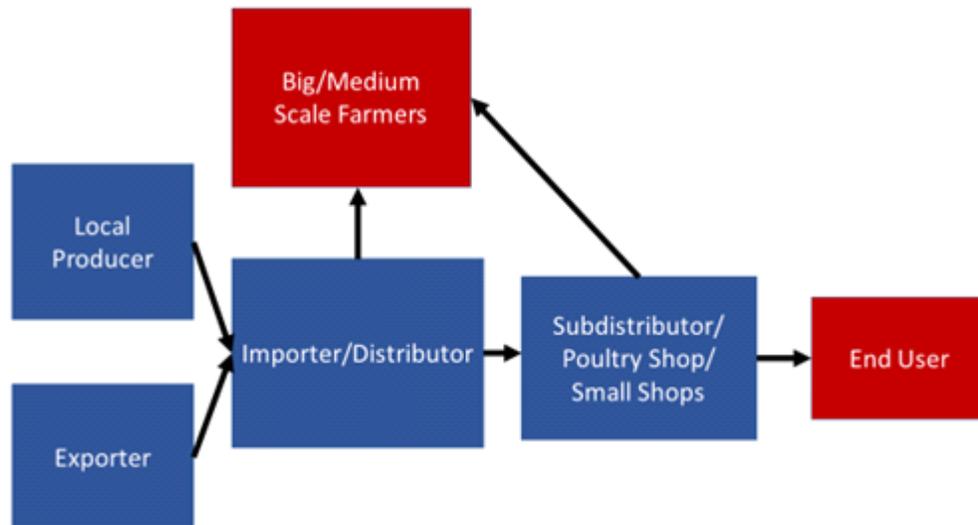
Animal medicine exports are currently increasing in value, the Ministry of Agriculture issued an export recommendation with the value of USD 1.9 billion in 2017, increased 29% from 2016's value and 70% from 2015's value. Meanwhile, the import volume for pharmaceutical preparations and premix decreased by 17.5% in volume from 395,656 tonnes in 2015, to 297,468 tonnes in 2016.⁹⁶

ASOHI also suggests that the market potential for cattle and pet drugs is currently growing, because of the limited number of producers/importers and the announcement of the government's self-sufficiency program for beef.

The animal medicine industry has a high potential due to the growing domestic demand for meat and related products. This is expected to set economic incentives to expand the local poultry and cattle population, which should increase the need for veterinary medicines.

⁹⁶ Ratya. M.P (2017) "Nilai Ekspor Obat Hewan RI Meningkatkan Jadi Rp 26 T", Detik, 5th April 2017. Available at: <https://finance.detik.com/berita-ekonomi-bisnis/d-3466256/nilai-ekspor-obat-hewan-ri-meningkat-jadi-rp-26-t>

General Supply Chain Scheme for Animal Drugs



Source: ASOHI, 2015

Registration Procedures

According to ASOHI, the import of animal drugs is supposed follow the steps under a registration regime for the products handled by the Ministry of Agriculture. As of February 2017, all animal drugs need to be registered online, according to official letter of Directorate General of Livestock and Animal Health (number 21003/PK.350/F.4/02/2017). Producers, importers, as well as exporters need to conduct all registration procedures through a website and all required data and documents related to the animal drugs need to be uploaded to it.⁹⁷

2. Key Players

2.1. Feed

PT. Charoen Pokphand Indonesia Tbk.

Charoen Pokphand Indonesia is the subsidiary of a parent company based in Thailand. It was established 1972 and is one of the biggest animal feed producers in Indonesia. Not only limited to animal feed, Charoen Pokphand Indonesia also produces DOC and meat based, processed food. Two of its most popular brands in Indonesia are Fiesta and Champ. Total income of this company increased by 29.04% Year-on-Year (YOY), with total net sales of US\$ 3.8 billion. Of

⁹⁷ Infovet (2017), "1 MARET 2017, PENDAFTARAN OBAT HEWAN HARUS VIA ONLINE", Infovet Website. Available at: <http://www.majalahinfovet.com/2017/03/1-maret-2017-pendaftaran-obat-hewan.html>

this amount, US\$ 1.8 billion comes from feed, US\$ 1.05 billion from broilers, US\$ 370 million from Day Old Chick (DOC), US\$ 30million from processed meat, and the rest from other products.⁹⁸

Japfa Comfeed

Established in 1917, Japfa Comfeed works in the cattle and poultry feed industry and has become a well-known animal feed and integrated agribusiness company in Indonesia. It operates in five divisions; poultry, aquaculture, beef cattle, consumer products, and supporting businesses. Its poultry business comprises three subdivisions; poultry feed, poultry breeding, and commercial farming.⁹⁹ Japfa also holds other companies operating in beef cattle breeding and aquaculture; PT. Multibreeder Adirama Tbk and PT. Suri Tani Pemuka. Since 2008, Japfa has a production capacity of 1.73 million tonnes of animal feed per annum. Total income of Japfa Comfeed increased by 9.38% Year-on-Year (YOY). Farms and consumer products contribute US\$ 941 million to total net sales, feed contributes US\$ 851 million, DOC contributes US\$ 180 million, aquaculture contributes US\$ 167 million, and cattle contributes US\$ 102 million.¹⁰⁰

2.2. Dairy

Frisian Flag Indonesia

Frisian Flag Indonesia is the biggest producer of milk based sweetener, milk powder, and milk based drinks in Indonesia. Friesland Campina, the Dutch parent company, also also markets a series of premium milk products for pregnant woman and growing children (Friso) in Indonesia. Frisian Flag Indonesia's sales went up to US\$ 538.4 million, which keeps it on top of the dairy market with a share of around 60%.¹⁰¹ Their production sites are in Pasar Rebo and Ciracas. Since 2013, Frisian Flag Indonesia have conducted Farmer to Farmer (F2F) programs to increase farmer income by improving management and operational systems related to milk production and has supported 899 milk farmers to date.¹⁰² In 2017, Frisian Flag dominated sales of condensed milk products, with 59%. This was supported with investment in marketing and in-store promotion. The company maintains good quality and affordable prices.¹⁰³

⁹⁸ Hafiyyan (2018), "Pendapatan Emiten Unggas Belum Sejalan dengan Laba", *Bisnis Indonesia*, 5th April 2018. <http://market.bisnis.com/read/20180405/192/780942/pendapatan-emiten-unggas-belum-sejalan-dengan-laba>

⁹⁹ Reuters, *Japfa Comfeed Indonesia Tbk PT*, n.d. Available at: <http://www.reuters.com/finance/stocks/companyProfile?symbol=JPFA.JK#KWIUpplYxgpcQJtG.97>

¹⁰⁰ Op, cit. *Bisnis Indonesia Market*.

¹⁰¹ *Tribun Bisnis Online* (2012), "Frisian Flag Optimis Raih Penjualan Rp 7,84 T", 5th October 2012. Available at: <http://www.tribunnews.com/bisnis/2012/10/05/frisian-flag-optimis-raih-penjualan-rp-784-t>

¹⁰² Frisian Flag (2017), "Program Farmer2farmer Frisian Flag Indonesia Terbukti Mampu Tingkatkan Kesejahteraan Peternak Sapi Perah Lokal Indonesia", Press Release, 26th March 2017. Available at: <http://www.pressrelease.id/release/program-farmer2farmer-frisian-flag-indonesia-terbukti-mampu-tingkatkan-kesejahteraan-peternak-sapi-perah-lokal-indonesia>

¹⁰³ Euromonitor International (2017), *Dairy in Indonesia*, August 2017. Available at: <https://www.euromonitor.com/dairy-in-indonesia/report>

PT. Greenfields Indonesia

PT Greenfields Indonesia was established by Indonesian and Australian entrepreneurs and has been cooperating with Austasia as their distributor since 1997. This company is part of the agriculture and food giant company, PT Japfa Comfeed Indonesia. The first milk processing facility started its operations in June 2000 in Malang, East Java. Currently, Greenfields Indonesia has more than 6,000 Friesian Holstein cows and produces more than 20 million liters of fresh milk annually. Until now, Greenfields has seven farmfields in China and two in Indonesia; 50 hectares in Kawi Mount hill and another 170 hectares in Blitar.¹⁰⁴ Greenfields exports their products to Hong Kong, Singapore, Malaysia, the Philippines, Cambodia, and Myanmar. According to its company profile, each of their cows produce 27 liters of milk a day, and total company production is around 1,000 tonnes of fresh milk a day. Greenfields processes its milk into various dairy products, such as fresh milk, Ultra-High-Temperature Milk (UHTM), cheese, chocomalt and whipping cream. Greenfields is currently in process of increasing their dairy cattle population and aims to own 10,000 cattle, with production of 50 million liter per annum.

PT Ultra Jaya Milk Industry & Trading Company Tbk

Ultrajaya's dairy is located in Pangalengan, West Java. On 35 hectares, it keeps around 3,000 cattle, of which 1,500 are dairy cows. Ultrajaya is planning to expand its business by bulding a mega farm in Berastagi, North Sumatra, that will be formally launched in next two years. This farm will be built to operate with 30,000 milk cattle on 12 hectares.¹⁰⁵ The UHT processing facility owned by Ultra Jaya is capable of producing 500 million litres of milk per year. Kraft Ultrajaya has the largest value share in the cheese market in 2017, at 60% . This is a result of its market knowledge and early entry into the Indonesian cheese market. The company's range of products are suitable to Indonesian tastes and they also produce cheese with an infusion of traditional flavors.¹⁰⁶ Ultrajaya's revenue in the first semester of 2018 reached approximately US\$ 100 million, which is a 10.3% growth from the same period last year. However, their annual profits experienced a reduction of 31.69%, at US\$ 12.8 million.

2.3. Cattle and Feedlot

PT. Berdikari (Persero)

PT Berdikari was first established under the name of PT Pilot Proyek Berdikari (PT PP Berdikari) in 1966, before becoming a state-owned enterprise (SOE), called PT Berdikari (Persero). PT Berdikari's facility in West Nusa Tenggara has the capacity to process 20 beef cattle on average per day. Annual sales from the livestock sector (the main business line of PT Berdikari)

¹⁰⁴ Aziliya. D (2017), "Greenfields Tingkatkan Populasi Sapi Perah", Bisnis Indonesia, 9th October 2017. Available at: <http://industri.bisnis.com/read/20171009/99/697487/greenfields-tingkatkan-populasi-sapi-perah>

¹⁰⁵ Faisal. M (2018), "Ultra Jaya Berdayakan 50 Ribu Peternak Sapi, Siap Buka Peternakan di Brastagi", Waspada Medan, 2nd August 2018. Available at: <http://waspadamedan.com/index.php/2018/08/02/ultra-jaya-berdayakan-50-ribu-peternak-sapi-siap-buka-peternakan-di-brastagi/>

¹⁰⁶ Op, Cit. Euromonitor International.

experienced a downturn, from US\$ 15.6 million in 2015, to US\$ 3.9 million in 2016, due both external and internal problems. However, since 2017 the company expanded its business line to poultry, under the Economic Coordinating Ministry's decision to involve SOE in poultry business in order to control the market price. The expansion began by importing DOC, with total imports of 36,000 heads by March 2018.¹⁰⁷ Besides the decision to include Berdikari in the poultry business, the Economic Coordinating Ministry Meeting also assigned the SOE to import frozen beef to stabilise market prices, totalling an estimated 20,000 kilograms.¹⁰⁸

PT. Santosa Agrindo and PT. Austasia Comfeed (Santori)

In the red-meat sector, Japfa Comfeed cooperates with its affiliates PT. Santosa Agrindo and PT. Austasia Stockfeed to sell its brand Santori. These affiliates conduct business in beef cattle breeding, fattening and meat processing. In Lampung they manage a project which includes cattle breeding facilities and feedlots. They purchase by-products from surrounding farmers and food producers to be used in their animal feed to maintain the quality of their cattle's nutrition. Japfa's Beef Division produces in excess of 150,000 tonnes of beef annually. Japfa's affiliates also operate a facility in Banten, which has adopted Halal methods for producing beef, offal, meatballs, and sausages. PT. Santosa Agrindo and PT. Austasia Comfeed's beef business contributes US\$ 500 million per year to Japfa revenues, which ensures that Japfa has the second largest share in this sector.¹⁰⁹ Recently, Santori exported the first ever 600kg batch of Wagyu beef to Myanmar. Wagyu beef from Indonesia is considered cheaper than that from Japan. The Wagyu beef business line of Santori has a feeding lot with a total capacity of 150,000 heads per annum and abattoirs with total capacity of 24,000 tonnes per annum.¹¹⁰

2.4. Vaccines and Medicines

PT. Sanbe Farma

PT. Sanbe Farma is one of the biggest pharmaceutical manufacturers in Indonesia, with more than 8,000 employees in total. Sanbe operates in both human and animal pharmaceuticals. It also possesses nine manufacturing and related facilities in Indonesia, specialising in different sub-sectors. Sanbe is a global player, operating in eleven countries in Asia and Africa, including Malaysia, Singapore, Thailand, South Africa, Sri Lanka and Ethiopia. Sanbe Farma also sells veterinary vaccines and animal health products (probiotics and pharmaceuticals) under the label Caprifarmindo Laboratories, which owns a plant in Bandung, West Java.¹¹¹

¹⁰⁷ Gumilar. P (2018), "PT Berdikari Terjun ke Bisnis Perunggu", *Bisnis Indonesia*, 5th March 2018. Available at: <http://industri.bisnis.com/read/20180305/99/746066/pt-berdikari-terjun-ke-bisnis-perunggasan>

¹⁰⁸ Reily. M. (2018) "*PT Berdikari Dapat Jatah Impor Daging Kerbau*", *Kata Data*, 13th April 2018.. Available at: <https://katadata.co.id/berita/2018/04/13/pt-berdikari-dapat-jatah-impor-daging-kerbau>

¹⁰⁹ JAPFA Comfeed Indonesia, *Beef Division*, n.d. Available at: <http://www.japfacomfeed.co.id/beef.html>

¹¹⁰ Kontan (2018), "Santori ekspor 600 kg daging wagyu Ke Myanmar", 7th February 2018. Available at: <https://industri.kontan.co.id/news/santori-ekspor-600-kg-daging-wagyu-ke-myanmar>

¹¹¹ Sanbe Farma, official homepage. <http://www.sanbe-farma.com/>

Medion Indonesia

Medion Indonesia has been producing, manufacturing, and selling pharmaceutical products, vitamins, vaccines, and poultry equipment for more than 46 years, and operates in other Asian countries and in Africa. Medion has implemented Good Manufacturing Practices (GMP) in their manufacturing facilities. Their products are divided into vaccines, pharmaceuticals, and also equipment for animal husbandry of various kinds, such as poultry, cattle, pigs, horses, and fish. Medion also produces Avian Influenza (AI) vaccines for poultry; chickens, birds and ducks, which aims to tackle pathogens that occur in Indonesia and other Asian countries. Under the name of Meditech, Medion also provides a wide range of equipment for indoor poultry breeding, such as drinkers, feeders, brooders, cage equipment, syringes, as well as debeakers and incubators.¹¹²

V. National Policies and Relevant Regulations

Due to its huge market size, Indonesia is very attractive for investors and exporters. The Government of Indonesia has been regulating the market to protect local businesses and consumers, attempting to encourage fair competition while promoting investment security.

A special regulatory measurement in Indonesia requires the import of animals and animal products, as well as other organic and genetically modified products sold in Indonesia, complies with certain regulations such as halal and labelling.

1. Halal Regulation

With the biggest Muslim population in the world, the Indonesian government acknowledges the concept of *Halal*. *Halal* in Arabic means permitted or lawful. This term covers not only food and drink, but also all matters of daily life and routine. Halal foods are those that are allowed under Islamic dietary guidelines, including restrictions on food preparation. To date, the regulation addressing Halal products has been included in the Consumer Protection Law No.8/1999, Government Act No. 69/1999 on Labeling and Advertising of Food, and Law No. 18/2012 on Food.

As stated in the Animal Husbandry and Animal Health Law No. 41/2014, all products using animal ingredients and derivatives circulating in Indonesia, whether local or imported, shall bear the Halal certification if it abides by those guidelines.

In September 2014, the government passed Law No 33/2014 on Halal Product Guarantee (UU JPH) which stipulated that halal certification is mandatory for all food, beverages, drugs, cosmetics, chemicals, organic products, and genetically modified products sold and consumed in Indonesia. This is also applicable for machinery and equipment used in processing these products.

¹¹² Medion Bandung – Indonesia, official homepage. Available at: <http://www.medion.co.id/>

The Halal Product Guarantee Agency (Badan Penyelenggara Jaminan Produk Halal-BPJPH) was formally established in October 2017 under the Ministry of Religious Affairs. However, the mandate of the agency does not necessarily put aside the MUI (Indonesia’s Muslim clerical body, *Majelis Ulama Indonesia*) authority to issue Halal certificates. BPJPH will only oversee the collection of fees and issues certificates for certain products. MUI still has the authority to decide which products should be halal and which should not, through a halal fatwa (opinion based on Holy Quran) and by conducting a halal fatwa sitting to give the final decision on the halal approval of a product.¹¹³

By the establishment of BPJPH, there are three parties included in the halal certification process; BPJPH, MUI, and the Halal Inspection Agency (Lembaga Pemeriksa Halal-LPH). The halal certification process is initiated by a document submission to the BPJPH, then the BPJPH will assign the LPH to inspect the product, LPH will then submit the result to BPJPH to be forwarded to MUI. Once MUI has conducted a halal fatwa sitting on the product, BPJPH will then issue the Halal Certificate.¹¹⁴

It has to be noted, MUI also recognises halal certificates issued by any approved halal certification body in Europe, such as Halal Quality Control in the Netherlands. To date, there are eight approved European Halal certification bodies. However, LPPOM MUI might still ask for supporting documents to clarify the critical points of certain certified products.

The approved European Halal Certification Bodies:

European Certification Body	Country	Slaughtering	Processed Food	Flavouring
Halal Food Council of Europe (HFCE)	Belgium	•	•	•
World Halal Authority (WHA)	Italy	•	•	•
The Muslim Religious Union in Poland (MRU)	Poland	•	•	
Halal Quality Control (HQC)	The Netherlands	•	•	•

¹¹³ Yanuar. Y (2017), “BPJPH Berdiri, MUI Tetap Berperan dalam Sertifikasi Produk Halal”, Tempo, 15th October 2017. Available at: <https://bisnis.tempo.co/read/1024868/bpjph-berdiri-mui-tetap-berperan-dalam-sertifikasi-produk-halal>

¹¹⁴ Khoiron (2017) “Bagaimana Proses Penerbitan Sertifikat Halal? Ini Penjelasan Kepala BPJPH”, Ministry of Religious Affairs, 13th October 2017. Available at: <https://kemenag.go.id/berita/read/505887/bagaimana-proses-penerbitan-sertifikat-halal--ini-penjelasan-kepala-bpjph>

Instituto Halal De Junta Islamica (Halal Institute of Spain)	Spain	•	•	
Halal Certification Europe (HCE)	United Kingdom	•	•	
Total Quality Halal Correct (TQHCC)	The Netherlands	•	•	•
Halal Control e.k	Germany		•	•
Halal Food Authority	United Kingdom	•	•	
Halal Feed and Food Inspection Authority (HFFIA)	The Netherlands		•	•

Source: Halal MUI, 2018

2. Labeling

Ministry of Trade Regulation No. 22/2010 to Amend the Existing Regulation on Labeling Obligations (Ministry of Trade Regulation No. 62/2009)

According to this regulation all local and foreign companies that produce or import goods for the Indonesian market are obliged to attach labels written in Bahasa Indonesia starting from January 2014. However, there is a grace period, in which labels may be attached on the package in form of a sticker. For raw materials, product labels are still allowed to use the original language.¹¹⁵ This also applies to the agriculture sector, which is also mentioned in Food Law No. 18/2012 and PP No. 69/1999 about Labels and Advertisements. As of January 1st 2013, the labeling regulation requires imported products to have such labels before entering the Indonesian Customs Area. Before importing any products, the importer has to submit a sample of the label written in Bahasa Indonesia to the Ministry of Trade for prior approval. The National Agency for Food and Drug Control (BPOM) regulations require labels to be written in Bahasa Indonesia and to also notify of any GMO-derived ingredients. Claims and statements about the benefit of foods shall not be included unless scientifically proven.

¹¹⁵ Ibid

Ministry of Trade Regulation No. 72/2015 on Indonesian National Standard and Ministry of Trade Regulation No. 20/2009 on the Provisions and Procedures for Surveillance of Goods and Services

Each product subjected to Indonesian National Standards (SNI) is obliged to carry the SNI logo, Product Registration Number (NRP), or Registration Number Item (NPB) and a label in Bahasa Indonesia when being traded.¹¹⁶

There are several SNI related to agribusiness:¹¹⁷

Fertiliser:

- SNI 02-1760-2005 ammonium sulphate fertiliser
- SNI 02-3776-2005 natural phosphate fertiliser for agricultural purposes
- SNI 02-2805-2005 potassium chloride fertiliser
- SNI 2803:2012 solid NPK fertiliser
- SNI 02-3769-2005 SP-36 fertiliser
- SNI 02-0086-2005 triple superphosphate fertiliser
- SNI 2801:2010 urea fertiliser

Seedlings

- SNI 6232:2015 spread seeds of open pollinated corn (*Zea mays*)
- SNI 8172:2015 hybrid corn (*Zea mays*) seeds
- SNI 6234:2015 soya bean seeds
- SNI 6233:2015 inbred rice seeds

Agricultural Machinery:

- SNI 02-3154-1992 agricultural equipment and machinery – equipment for planting, fertilisation, and spraying
- SNI 02-0050 -1994 Farm tractor disc plow
- SNI 7416 1:2008 and SNI 7416 2:2008 four-wheeled agricultural tractors for soil working

3. Agriculture

Regulations Related to the Importation of Horticultural Products into Indonesia

Ministry of Trade Regulation No.64/ 2018, revised Regulation No.30/2017 in two major ways; warehouse space and downstream sales limitations. In the new regulation importers are no longer required to own warehouse space, but do need to show proof that they have control of storage

¹¹⁶ Ministry of Trade (2014) “Kemendag Pertegas Aturan SNI, 215 Produk dalam Pengawasan”, 7th November 2014. Available at: <http://ditjenspk.kemendag.go.id/files/pdf/2015/01/12/kemendag-pertegas-aturan-sni-215-produk-dalam-pengawasan-id0-1421036964.pdf>

¹¹⁷ SNI List of National Standards. Available at: <http://sispk.bsn.go.id/SNI/DaftarList>

and distribution, meaning that the regulation allows importers to lease warehouses. The revised regulation does not mention warehouse space and capacity specifically. The second major revision is on the restriction of direct downstream sales. In the revised regulation, the importers are no longer required to own warehouse space, but still have to show the proof of controlling one. There is also no specific space quantitative requirements mentioned in the revised regulation. It also removes restrictions off importers to conduct direct sell to retail. ¹¹⁸

Ministry of Agriculture Regulation No.60/2012 and Ministry of Trade Regulation No.16/2013

In order to import horticulture products into Indonesia, an import-licensing regime has been imposed by the Ministry of Agriculture and the Ministry of Trade. Key points from the new regulation from the Ministry of Trade is that imports can only be undertaken if the importer is either a Producing Importer (IP), or a Registered Importer (IT), and holds a Recommendation for Horticulture Products (RIPH) from the Ministry of Agriculture. The registration process for IP, IT, and RIPH can only be conducted online through INATRADE. Horticulture products should also be verified, or pass an investigation on the import technicality in the origin port by an appointed surveyor.¹¹⁹

Ministry of Agriculture Regulation No.38/2017 on Horticulture Products Import Recommendation Replacing Regulation No.16/2017

The import process of horticulture products has a similar licensing regime as that for the import of animals and animal products (dairy, meat, etc.). The product should obtain an import agreement from the Ministry of Trade, which requires a RIPH and a letter of agreement from the National Agency of Drug and Food Control (BPOM) for processed food products. In order to gain the recommendation from the Ministry of Agriculture, the imported horticulture products require documents such as; good agricultural practices, packing house registration, a storage device statement, and suitable storage capacity. Under the new regulation, the RIPH period of validity has been revised from six months to a year in length and the registration process can be undertaken at any point during the year, rather than the previous biannual scheme. The regulation covers 28 fresh horticulture commodities, whereas the previous regulation covered 54 products, including processed products. The Ministry of Trade will estimate the importer's cold storage capacity and will issue import permits and specify quantities based on this assessment.

Ministry of Agriculture Regulation No. 55/2016 on Fresh Food Plant Origin (FFPO) Recognition Procedures

FFPO means food of plant origin that has not processed, readily consumed, minimally processed, and/or raw materials. There are 103 types of FFPO commodities regulated under this regulation,

¹¹⁸ Rittgers. C (2018), *MOT Revises Requirements on Horticultural Import Permits*, GAIN, Report Number ID1819. Available at:

https://gain.fas.usda.gov/Recent%20GAIN%20Publications/MOT%20Revises%20Requirements%20on%20Horticultural%20Import%20Permits_Jakarta_Indonesia_7-10-2018.pdf

¹¹⁹ SWA Online (2013) "Inilah Tujuan Pemerintah Terbitkan Aturan Impor Hortikultura yang Baru", 26th April 2013. Available at: <https://swa.co.id/swa/trends/management/inilah-tujuan-pemerintah-terbitkan-aturan-impor-hortikultura-yang-baru>

including fruits, vegetables, grains, nuts, pulses, and estate crops. FFPO imported to Indonesia requires recognition of the exporting country's food safety controls, as well as recognition of food safety testing laboratories, and, if the FFPO does not possess both recognition and regulation, then the products will become subject to various safety requirements and plant quarantine upon arrival. The new regulation also removes beans, olives, and dates from the FFPO commodity list.¹²⁰

Presidential Regulation No. 44/2016 on the Negative Investment List

The 2016's Negative Investment List (NIL) limits the investment in staple food crops seeding/seedling businesses for 49%, plantation seeding business for 95%, and plasma plantation for 20% of foreign capital ownership. Foreign ownership in the agriculture sector for seedlings, cultivation, processing and research for horticulture products (such as grapes, apples, citrus and vegetables) is set to a maximum of 30%. For horticultural tourism and other horticulture related services, such as post harvesting, consultancy and landscaping, the same threshold applies. A closed business for investment in the agribusiness sector is the cultivation of marijuana.

Regulations of Intellectual Property Rights

Law No. 19/2002 on Intellectual Property Rights and Government Regulation No. 20/2005 indicates that intellectual property rights include the license, co-operation, science and technology services and publications of agriculture research and development results. The Center for Agricultural Technology Transfer Management (BPATP) has the authority to register intellectual property rights related to agricultural products. Minister of Agriculture regulation No. 6/2012 states the guidelines to obtain legal protection of Intellectual Property Rights.

4. Livestock

Regulations Related to Importation Law No. 41/2014 as Amendment of Law No. 18/2009

Pursuant to Law No. 18/2009, ruminant livestock is allowed to enter Indonesia based on its country of origin. According to Law No. 41/2014 Article 36C, it is now permissible to import ruminants to Indonesia from certain zones of a country. This opens up potential imports from certain zones of Brazil, for example, not only from Australia, New Zealand or the USA. In Article 36D, cattle coming from a certain zone of a country must be quarantined on a specific island for certain amount of time.

After the issuance of this regulation a partnership program between big agribusiness companies and small-scale farmers has been developed. Within the partnership, often established under a contract between two parties, the bigger company provides the inputs, such as breeding cattle,

¹²⁰ Wright. T (2016), "Indonesia Revises FFPO Import Procedures", GAIN, Report Number ID1637. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Indonesia%20Revises%20FFPO%20Import%20Procedures_Jakarta_Indonesia_12-13-2016.pdf and <http://apeda.gov.in/apedawebsite/menupages/summary-regulation-moa-04-2015-final.pdf>

DOC, feeds, vaccines, and drugs, while the small-scale farmer provides the cultivating cost and cages/stalls.

Ministry of Agriculture Regulation No. 23/2018 on Importation of Carcasses, Meat, Offal and related Products

The new regulation replaces Ministry of Agriculture Regulation No. 34/2016. The new regulation still allows for the importation of larger kinds of bovine meat cuts and a variety of meats like the 2016 regulation. Only certain cuts are no longer included in Attachment I and II on the list of allowed meat to import to Indonesia, such as bovine heart and lung. There are some additions to the list including some varieties of non-bovine meat such as chicken wings, thighs and liver. To note, before the 2016 regulation, the government only allowed certain bovine meat products for the private sector.

Before an Import Permit from the Ministry of Trade is issued, importers need to apply to the Ministry of Agriculture for an Import Recommendation. The revised regulation allows the private sector to apply for Import Recommendation to any quantity (import quota from Ministry of Trade is no longer issued), but the Import Recommendation will be the subject to import realization and distribution plan from the Ministry of Trade.¹²¹ Since the 2016 regulation, the government has also opened the market for imported beef for both traditional and retail markets.

Certain changes were made in the 2018 regulation, revising the 2016 regulation; the new regulation does not mention regarding the level of acceptable protection, and instead it regulates the import risk analysis. The new regulation gives detailed process of desk and on site review for registration of country origin as well as business unit that are willing to import meat to Indonesia. It also allows for changes in product details, business unit, and country origin if there is an HS code change.

Ministry of Trade Regulation No. 13/2017 as an Amendment of Ministry of Trade Regulation No 59/2016 on Import Regulations of Animal and Animal Products

The new regulation does not introduce new rules other than those that have been mentioned by in previous laws, such as the Regulation No 59/2016 and Ministry of Agriculture Regulation No. 34/2016, other than several changes in the Attachment II on the list of animal and animal products limited for import. In the new regulation, the weight limit of imported feeder cattle is 450 kilogram, an increase from the 350 kilogram weight limit stipulated in Regulation No 59/2016.

In accordance with Law No 41/ 2014, the revision of this regulation allows imported animal and animal products from zones declared free from foot and mouth disease (PMK). Before exporting to Indonesia, all exporters are required to cooperate with a local partners or importers already certified as a Registered Importers of Animal and Animal Products. All imported animal and animal

¹²¹ Rangkuti & Darmawan (2016), "Indonesia Eases Import Rules for Meat Products", GAIN, Report Number ID1623.. Available at:
https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Indonesia%20Eases%20Import%20Rules%20for%20Meat%20Products%20_Jakarta_Indonesia_8-12-2016.pdf

products (including livestock, poultry, and their products) require an Import Permit issued by the Ministry of Trade. Besides the import permit, imported products are also required to produce a Certificate of Health from the origin country once the Import Permit is issued.

The regulation also mentions that the Government of Indonesia, through SOEs, has the right to import bovine meat for food security, stock, and price stabilisation. This passage most likely applies to Indian buffalo meat which has been imported to stabilise the Indonesian market price to under IDR 80,000 (US\$ 6.15) per kilogram.

Ministry of Agriculture Regulation No. 65/2014 on Animal Quarantine Measures

The Ministry of Agriculture issued this regulation on consumable products of animal origin (consumable HBAH) in May 2014. Consumable HBAH includes processed meat, dairy products, processed eggs, and other processed materials of animal origin.

The quarantine process can be conducted through the inspection, detention, rejection, eradication, and releasing of products. The inspection itself is aimed at both documents (Halal and Sanitation) as well as physical inspection (temperature, packaging, labelling, and conditions). In case the need arises, a product may be brought to the laboratory for further confirmation. An essential requirement for animal products to enter Indonesia is a sanitation certificate issued by a quarantine veterinarian at the exit point and a sanitation statement letter authorised by a veterinarian in the area of origin.

Ministry of Agriculture Regulation No. 30/2018 on Dairy Provision and Distribution

This new regulation amends the previous regulation from 2017, with a relaxation of requirements for farming and dairy-processing business units. The 2017 regulation put a burden on the business units by obliging them to conduct partnerships with local dairy farmers. The new 2018 regulation does not include the word 'obligated to', thus the regulation can be perceived more as recommendation rather than obligation. Partnership agreements are also no longer a consideration for import recommendations issued by the Ministry of Agriculture. Dairy companies are no longer obligated to have processing units, and can have a manufacturing partnership with the already established processing units through toll manufacturing.

Ministry of Agriculture Regulation No. 14/2017 on Animal Medicine Classifications

This regulation restricts specific types of animal medicines given to animals whose products are for human consumption. Articles 15 and 16 state that antibiotics as feed additives are restricted both in terms of the final product and raw materials. Restricted animal medicine products are listed in Attachment III of the regulation. For example, use of antibiotics as feed additives and synthetic hormones are restricted, some other elements such as oral, parenteral, and topical feed additives are also restricted. The restriction has been made to reduce the risk of human health issues after consuming animal products containing or contaminated by the animal medicines mentioned in the Attachment III.

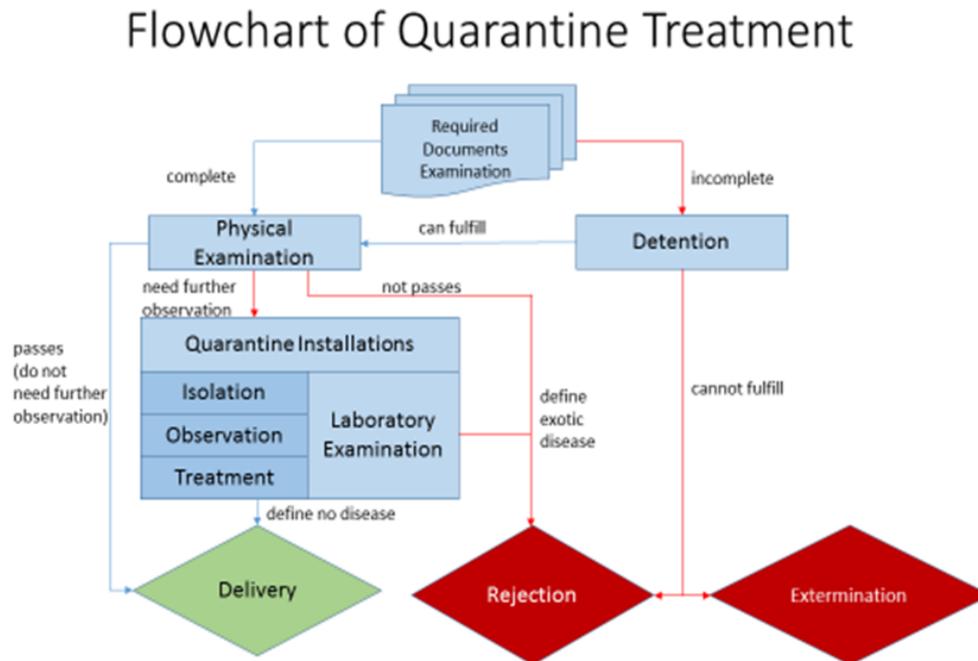
5. Import Barriers

All production facilities for agriculture, such as fertilisers, seeds and machines are required to go through the testing and certification office in Indonesia, which closely cooperates with the Indonesian Institute of Science (LIPI) and the Ministry of Industry.

All other agribusiness products are also required to go through the Quarantine Agency of the Ministry of Agriculture, in accordance with Regulation No.16/1992. This process also involves several examinations, observations, and laboratory tests in order to establish compliance of the country of origin and the product.

This quarantine process is conducted at the entry gate of the country, i.e. airports, seaports, post offices or state border posts. The flowchart below displays the aforementioned procedure for agribusiness products, including livestock and agriculture products. Products might be rejected if the documents are incomplete, or if they fail the quarantine examination.

Flowchart of Quarantine Treatment



Source: Ministry of Agriculture 2015

To understand which types of certification are needed for which purpose and what authority is in charge of issuing it, please refer to the table below.

List of All Export Certificates Required by Authorities

Products	Title of Certificates	Purpose	Requesting Ministry
Bovine genetics	Certificate of Health and Origin	Animal health	Ministry of Agriculture

Live animals	Certificate of Health and Origin	Animal health	Ministry of Agriculture
Animal by-products	Certificate of Health and Origin	Animal health	Ministry of Agriculture
Poultry, meat, and products derived from poultry and meat	Sanitary Health Certificate	Food safety	Ministry of Agriculture
Milk, milk powder, milk products & cream, poultry egg	Sanitary Health Certificate		Ministry of Agriculture
	Certificate of Free Sale	Food safety	National Agency of Drug & Food Control (BPOM)
Plant Products	Phytosanitary Certificate	Plant safety	Ministry of Agriculture
Fresh Meat, Dairy Products, Other Processed Food, and Food Additives	Halal Certificate	Product Meets Religious Standards	Indonesia Council of Ulama (MUI)
All Food Products	Health Certificate		
	Certificate of Free Sale	Food safety	National Agency of Drug & Food Control (BPOM)
	Certificate of Origin (for products from animal origin and its derivatives)		

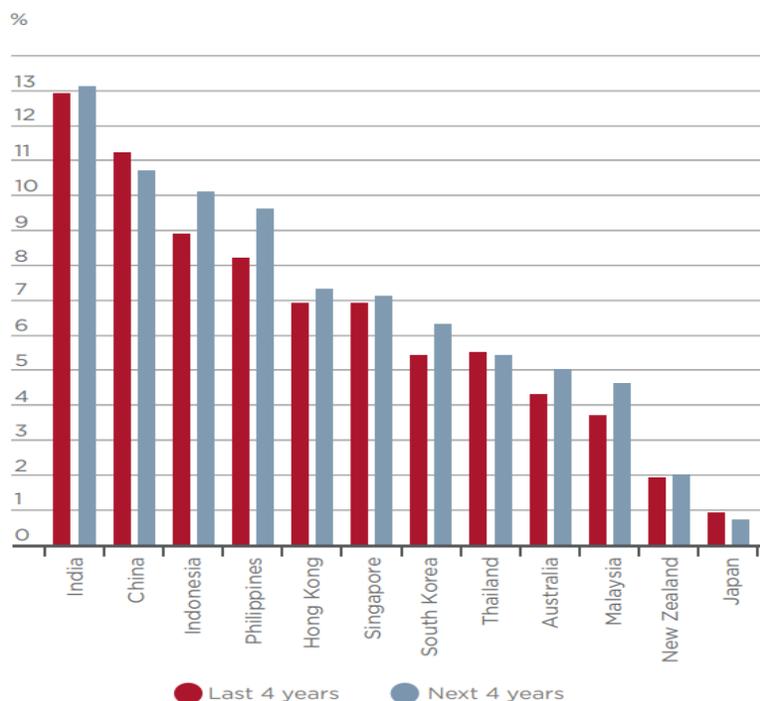
Source: USDA GAIN, 2017

VI. Opportunities and Challenges

Based on the Cushman and Wakefield report on global food and beverages, Indonesia has the third largest average annual sales growth in the food and beverage sector in the Asia-Pacific region. Growth in 2012-2016 was at 8.9%, while the growth in 2017-2020 is predicted to be at 10.1%, larger than other South-East Asian countries.

Food and Beverage: Biggest Average Annual Growth in Asia Pasific

AVERAGE ANNUAL GROWTH OF SALES IN THE F&B SECTOR



Source: Cushman & Wakefield Global Food and Beverage Report, 2017

1. Challenges

Although Indonesia shows good future prospects for the agribusiness market, this report would not be complete without mentioning the local challenges of doing business in Indonesia. This report has selected the challenges which either heavily influence the Indonesian market, or tend to have a certain influence on foreign companies conducting business in the country.

1.1. Indonesian National Standards (Standar Nasional Indonesia, SNI)

As stated in the Trade Ministry Regulation No. 72/2015, SNI are the standards regulated by the National Standardisation Agency (BSN) and are applicable nationally. While not all products are obligated to pass an SNI, each product subjected to SNI is required to carry a Registration Item Number (NPB) when being traded. The list of products subjected to SNI is available on the BSN website and is updated regularly.

Although the registration process to obtain NPB in the latest regulation is simpler than the 2014 regulation, the penalties for non-compliant products are tougher. SNI listed products not carrying NPB will be temporarily withdrawn from the market.

European companies planning to conduct business in Indonesia are highly recommended to comply with those regulations, because post control and compliance to the regulations can be very expensive. Consulting a market entry expert in advance is therefore essential.

1.2. Negative Investment List

Based on Article 12 (1) of the Investment Law No. 25/2007, the Negative Investment List (NIL) is compiled by the Indonesian Investment Coordinating Board (BKPM) and stipulates the sectors open to foreign investment in Indonesia and the percentage of foreign ownership permitted. The latest NIL is stated in Presidential Regulation No. 44/2016.

There are two categories: closed business fields, which are prohibited from conducting any investment activities; and limited business fields which are open for investment activities under certain requirements such as:

- Limited to foreign investment
- Certain location
- Special permits
- Reserved for local investment; 100 percent
- Capital ownership limitation within ASEAN Framework

1.3. Infrastructure Demand

When doing business in Indonesia, foreign companies must bear in mind that infrastructure related to food transport and food preservation are under-developed, particularly outside Java. Indonesia ranks 51st out of 167 countries in the 2018 Logistic Performance Index of the World Bank, this ranking is an improvement from 2014, when Indonesia ranked 53rd.¹²²

Frozen and chilled products face significant challenges due to a lack of access to refrigeration facilities in Indonesian households, but most importantly within the entire food supply chain. Remote areas in Indonesia do not always have access to electricity, which creates significant obstacles to cold chain development. Closing the gaps within the cold chain is a tremendous challenge for a huge archipelagic country like Indonesia. Therefore, investment in transport infrastructure (not only related to food preservation) between the thousands of Indonesian islands is in high demand (roads, ports, railroads, and shipping) and makes it challenging to provide easy and fast access for food products.

Indonesia has potential market opportunities for infrastructure investment preparation. Demand from consumers is high, but the lack of infrastructure and Indonesia's island geography has made the cold chain market ineffective. The total amount of insulated panels for cold storage reached 446,000 square meters in 2017, this number is a 16.4% decrease from 2016. The total number of refrigerated vehicles in 2017 was 7,200 units, a 34.3% increase from 2016.¹²³

¹²² The World Bank Aggregated LPI Table. Available at: <https://lpi.worldbank.org/international/aggregated-ranking>

¹²³ Asosiasi Rantai Pendingin Indonesia (Indonesian Cold Chain Association) (2017), *Cold Chain Data 2017*.

Available at: <https://arpionline.org/cold-chain-data/>

The current government is focusing on the development of more sophisticated and robust maritime connections within the archipelago, in order to lower the transportation costs between the western and eastern parts of the country. Additionally, the government is investing in the development of the trans-Sumatra and trans-Sulawesi highways to connect those consumer markets.

1.4. Market Access

Corruption and bureaucracy remain the biggest burden for those working in the Indonesian market. These issues not only affect the agribusiness sector, but also all other sectors of the Indonesian economy. Therefore, companies must be aware of the risks and difficulties they face when investing or conducting business in Indonesia. Thus, involving professional consultants, such as the EU-Indonesia Business Network (EIBN), or other foreign Chambers of Commerce and Industry and Trade Agencies, is highly recommended due to their knowledge of national and local procedures, regulations and market insights.

In addition to this, particular regulations regarding agribusiness products might also be challenging for foreign companies, such as Indonesian language labeling and the notification of genetically modified ingredients, as mentioned in the “National Policy and Relevant Regulations” section above.

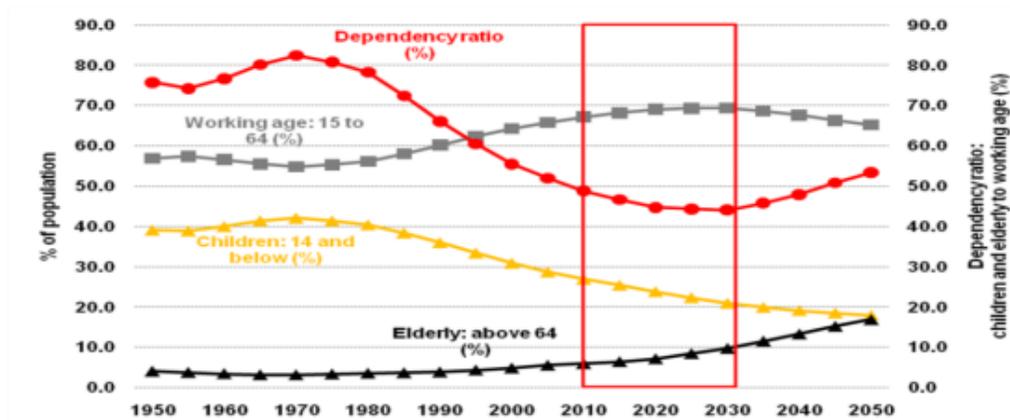
2. Opportunities

Besides the aforementioned challenges, Indonesia has a lot of potential for European companies that are eager to expand into the Indonesian market. The market opportunities listed below range from demographic developments, to an overview of the relevant cross-linkages between agribusiness and other sectors influencing this industry.

2.1. Indonesian Demographics

As the fourth most populous country in the world, Indonesia’s population has been growing at a constant pace, reaching 265 million in 2018. Approximately 43% of the population is aged between 0 and 24 years old, showing a similar picture to other emerging markets. Indonesia’s population distribution is shifting, due to lower birth rates and an increase in average life expectancy, resulting in a higher share of population in the working age-group. It is expected that 70% of the population will be of working age by 2025. In 2017, Indonesian GDP reached US\$ 1,014 billion and US\$ 3,876 GDP per capita. With higher incomes and a steadily increasing number of middle income households, Indonesia has become a more attractive market than ever before.

Indonesian Demographic Transition



Source: Master plan of the acceleration and expansion of Indonesia's Economy 2011-2025

According to the World Bank, more than 50% of the total population lives in urban areas. This urbanisation process in Indonesia is expected to continue, underlined by a UN forecast that predicts two-thirds of Indonesian consumers will be urbanised by 2050. It is also important to bear in mind that a large proportion of the population, approximately 60%, are located on Java island.¹²⁴

¹²⁴ The World Bank (2015), *Population Estimates and Projections*, World Bank Group. Available at: <http://data.worldbank.org/data-catalog/population-projection-tables>

World Bank Population Projection (In millions) and Projected Population Increase (in %) 1995-2050

	1995	2000	2025	2050	% increase 1995-2050
<i>Ten most populous countries in 1995</i>					
China	1199	1255	1471	1556	30
India	934	1016	1370	1623	74
U.S.A.	263	276	323	335	27
Indonesia	193	206	265	304	58
Brazil	161	172	224	254	57
Russia	149	150	153	152	2
Pakistan	130	148	243	316	144
Japan	125	127	124	115	-8
Bangladesh	121	132	182	218	80
Nigeria	111	128	217	288	159
<i>Other populous ASEAN countries</i>					
Vietnam	74	82	117	142	92
Philippines	69	77	115	143	107
Thailand	61	65	81	91	51

Source: World Bank, 2015

2.2. Changing Consumption Patterns

Indonesia is identified as an emerging middle-income country by the World Bank, with the number of middle-income households predicted to increase from 28 million in 2016, to 42 million in 2021, with an average annual growth of 5% GDP. Economic growth, the rise of youth and urban populations, as well as the increasing awareness of health and food safety, are key factors behind changing consumption patterns.¹²⁵ Besides healthy foods, there is also a rapid growth in the modern retail sector and a growing market for imported foods, mainly from Western Countries and East Asia. These modern markets target urban and young populations who can afford the premium price of imported goods.

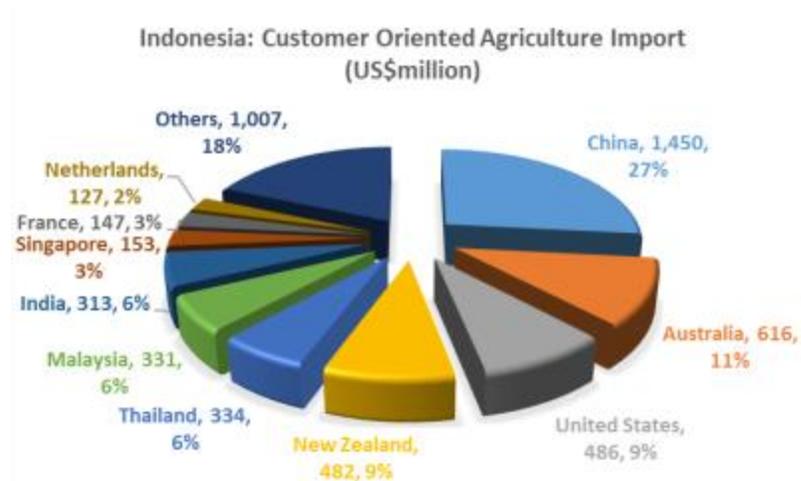
Mintel reports that the majority of Indonesian urbanites are seeking healthier diets and lifestyles. As much as 75% of city dwellers aim to eat healthier while 58% aim to exercise more. The report states that 64% of respondents consumed high protein food to either have long-lasting energy, or to maintain their weight.¹²⁶

¹²⁵ USDA-FAS (2018) "Trade Opportunities in Southeast Asia: Indonesia, Malaysia, and the Philippines", 13th July 2018. Available at: <https://www.fas.usda.gov/data/trade-opportunities-southeast-asia-indonesia-malaysia-and-philippines>

¹²⁶ Yuniarni. S (2017), "Health-Conscious Indonesians on the Rise, Growth of Nutritious Products Expected", Jakarta Globe, 25th August 2017. Available at: <http://jakartaglobe.id/business/protein-food-sports-drinks-demand-to-climb-as-urban-indonesians-becoming-more-health-conscious-report/>

Indonesia imported US\$ 18.94 billion worth of agricultural products in 2017, and as much as US\$ 5.4 billion of these products were customer-oriented. Below is a chart of customer-oriented agriculture import shares in Indonesia, which is still dominated by Chinese products. EU countries with significant import shares are France and Netherlands, with three and two percent. Although the share for EU countries' agricultural products are limited, there are a good future prospects due to changing consumption patterns.

Customer-Oriented Agriculture Import by Countries (US\$ Million)



Source: USDA Gain Report, 2018

Following the trend of online shopping and internet literacy in Indonesia, the agriculture sector has begun to modernise. The rising number of agricultural startups and entrepreneurs have transformed Indonesian agribusiness into a more modern and organised market, those startups create collectives, promote modern farming and drive solutions for the agriculture sector.

Modern farm and online markets are providing various selections of organic vegetables, fruits, salad and juice to the blooming urban population. It enables easy access to a healthy lifestyle, a trend that has started to flourish among the middle class. These online markets and modern farms include Javara, FAM Organic, and SayurBox. Most of these entrepreneurs provide delivery services via their websites.

Besides the agriculture online market, there are agricultural technology services which provide farmers with support to improve farming practices. These support services provide data analytics, business incubator services, wireless sensors for soil and weather, software integration, finance and online marketplaces, as well as agriculture investment platforms.¹²⁷

Agribusiness based startups and entrepreneurship in Indonesia has promising prospects, looking at the e-commerce trend that has been increasing over the years. Research and development, as well as advanced technology know-how to improve agricultural startups in Indonesia is a new

¹²⁷ Durban. M, Australian Trade Website. *Insight - Indonesia on the hunt for agtech*. N.d. Available at: <https://www.austrade.gov.au/news/insights/insight-indonesia-on-the-hunt-for-agtech-innovations>

opportunity for business and investment. On the farm side, Indonesia also requires modern, organic, and sustainable solutions for the emerging production of modern farming in order to tap into the available market.

2.3. Sub-Sectors with High Potential for EU Companies

Horticulture and Food Crops

In order to reach the goals established by the government for food self-sufficiency, Indonesia urgently needs to modernise its agribusiness sector. Therefore, companies with expertise and experience in agribusiness, as well as with access to efficient technology can expect good opportunities to conduct business in Indonesia. Modern machinery to improve harvests from fields or plantations, high quality seedlings, and technology to cultivate organic horticulture and food crops are some technologies needed by Indonesian agribusiness.

Cattle – Livestock

As per capita income increases, so has the demand for and consumption of beef. Besides tapping into imported beef markets to supply the national demand, companies can also provide technology to improve overall cattle production in Indonesia, as this is also one of the focus areas of the Indonesian Government. Consultations, facilitation, and training for certified abattoirs is a particular business that may have demand from Indonesian beef producers.

Dairy

EU countries remain the top dairy exporters to Indonesia, with a total value of around US\$ 1,400 and 160,000 tonnes in volume. Trends in packaged dairy products such as cheese, RTD milk, yoghurt, and sour milk are rising. Meanwhile, popular products in retail outlets include un-spreadable processed cheese, UHT milk, fortified flavoured powdered milk, condensed milk, and yogurt drinks. The largest imported industrial dairy product in 2018, both in terms of volume and value, is Skimmed Milk Powder, followed by Whey Powder.

Poultry

Price and quality fluctuations of DOC, the local unavailability of the raw materials for feed, animal disease threat, and the high prices of poultry feed have resulted in an increase in poultry prices. In order to improve the poultry industry's competitiveness, modernisation in the production chain is required.¹²⁸ This modernisation and technology aims to make the production chain more efficient and cut the production cost of poultry products. European companies have an open opportunity to provide the technology and know-how required for modernisation.

Vaccines and Medicine

¹²⁸ Kuwado. F.J (2017), "Industri Unggas Tanah Air Masih Bermasalah", Kompas, 18th April 2017.. Available at: <https://regional.kompas.com/read/2017/04/18/00102481/industri.unggas.tanah.air.masih.bermasalah>

Based on 2016 data, 70% of the demand for vaccines and medicines for cattle and poultry is still fulfilled by imported products. European countries are some of the main origin countries of imported vaccines and medicines.¹²⁹ The market for imported premix and preparations is still open to foreign companies entering Indonesia, although this area saw negative growth from 2015 to 2017. Technology, research and development for vaccines, medicines, as well as raw materials, are other alternatives to improve the competitive advantage of such products.

2.4. Linkages to Other Sectors

Tourism and the Food Industry

The food and beverage industry is closely linked to the tourism sector. The direct contribution of travel and tourism to Indonesian GDP reached 1.9% or US\$ 19.4 billion in value, while the total contribution is 5.8%, or US\$ 58.9 billion in value. This generates opportunities within the food and beverage sector, especially in relation to the Western diet, to fulfil the demands of foreign tourists from particular countries.¹³⁰

Cosmetics and Beauty Products

Indonesia is home to approximately 30,000 types of medicinal plants, however, according to the Ministry of Industry, only 350 types have been used as materials for cosmetics and herbal medicines. The majority of materials for the cosmetic industry are sourced locally. There are good opportunities in Indonesia to cultivate medicinal plants, in line with increasing health awareness and organic cosmetics trends.¹³¹

¹²⁹ RMOL 31 July 2016. *Peternak Lebih Suka Pakai Vaksin Ilegal*. Available at:

<http://ekbis.rmol.co/read/2016/07/31/255178/Peternak-Lebih-Suka-Pakai-Vaksin-Ilegal->

¹³⁰ World Travel & Tourism Council (2018), *Travel & Tourism: Economic Impact 2018 Indonesia*. Available at: <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/indonesia2018.pdf>

¹³¹ Ministry of Industry (2017), "Industri Kosmetik dan Jamu Mampu Serap 15 Juta Tenaga Kerja - Dunia Usaha". Available at: <http://www.kemenperin.go.id/artikel/17920/Industri-Kosmetik-dan-Jamu-Mampu-Serap-15-Juta-Tenaga-Kerja---Dunia-Usaha>

VII. Conclusion

Agribusiness is a top contributor to GDP, which continues to grow due to significant demand, particularly related to the food and beverage industry and domestic consumption. Agriculture, forestry, and fisheries also remain important employers for Indonesians, with almost 30% of the working age population employed in these industries. The ultimate goal of the government is to achieve self-sufficiency, which is a long-term vision to produce agriculture products at home. According to 2016 data, agriculture import values reached US\$ 15 billion, with food crops as the dominant commodity. Although agricultural production in Indonesia is growing, there is still a need to import products in order to fulfill national demand.

With a population of over 265 million in 2018, a growing middle class, increasing tourism and a growing economy, Indonesia is an important market to consider. The Indonesian food and beverage sector is predicted to be the third fastest growing sector in upcoming years. Similar to other sectors, opportunities in agribusiness also face challenges, including infrastructure, market access, and dynamic regulations related to both imports and investment.

In the horticulture and food crops sub-sector, most consumable products are being produced locally by both foreign or local companies. The seedling sector is dominated by foreign companies that have been operating in Indonesia for a long time, such as DuPont, Cargill, Monsanto, and East West Seed. Meanwhile, the fertiliser market is dominated by SOE, Pupuk Indonesia. Technology, as well as research and development to effectively increase production are greatly required.

The EU remains the biggest exporter of dairy to Indonesia, with the total export of more than 160,000 tonnes in volume. The majority of dairy supplies are for industry, with almost five times greater value than that of direct consumption. Approximately 20% of the national demand for dairy is satisfied by imports. Packaged dairy products are gaining popularity due to increasing health awareness. To close the deficit of beef stock, Indonesia imports both breeding cattle and beef. Regulations of beef imports to Indonesia often change according to the demand and stock, in order to stabilise the price and to generate demand.

In conclusion, the agribusiness sector provides promising potential, with a large market and growing demand. Challenges in the Indonesian agribusiness sector should be seen as opportunities instead of barriers, in order to create new businesses that offer innovative solutions for improving the agribusiness sector.

Relevant Contacts

Indonesia Veterinary Drugs Association (ASOHI)

Address: Grand Pasar Minggu 88A Jl. Rawa Bambu Jakarta 12520
Phone: (021) 7064 2812
Fax: (021) 7820 408
Email: asohipusat@gmail.com
Website: www.asohi.org

Indonesian Meat Product and Feedlot Association (APFINDO)

Address: Grand Pasar Minggu 88L 2nd Floor, Jl. Rawa Bambu Jakarta 12520
Phone: (021) 7883 3001
Fax: (021) 7883 3004
Email: apfindo@cbn.net.id
Website: www.apfindo.org

Indonesian Agriculture Tools and Machinery Association (ALSINTANI)

Address: Adhi Graha Building 10th Floor, Jl. Gatot Subroto Kav. 56 Jakarta Selatan 12950
Phone: (021) 57930883
Fax: (021) 57930883
Email: org.gamma@yahoo.com

Indonesian Fertiliser Producer Association (APPI)

Address: PUSRI Building, 6th Floor, Jl. Taman Anggrek Kemanggisan Jaya Jakarta 11480
Phone: (021) 548 4057, 548 1208 Ext.: 476
Fax: (021) 548 3313
Email: -
Website: <http://www.appi.or.id/>

National Agency of Food & Drug Control (BPOM)

Address: Jl. Percetakan Negara No.23 Jakarta 10560 Indonesia
Phone: (021) 4244691/42883309/42883462
Fax: (021) 4263333
Email: ulpk@pom.go.id
Website: www.pom.go.id

Animal Drugs Quality Testing and Certification Agency (BBPMSOH)

Address: Jl. Raya Pembangunan Gunung Sindur, Jawa Barat 16340
Phone: (021) 7560489
Fax: (021) 7560466
Email: bbpmsoh@pertanian.go.id
Website: <http://bbpmsoh.ditjennak.pertanian.go.id/>

Directorate for Machinery and Agriculture Machines of Ministry of Industry (Direktorat Jenderal Mesin dan Alat Mesin Pertanian Kementerian Perindustrian)

Address: Gedung Kementerian Perindustrian, Jl. Jenderal Gatot Subroto Kav. 52-53 Jakarta Selatan 12950

Tel: (021) 525 5509

Fax: 021-5251893

Email: info-iubtt@kemenperin.go.id

Web: <http://iubtt.kemenperin.go.id/>

Directorate General of Customs & Excise (BEA CUKAI)

Address: Jl. Jend Ahmad Yani, Rawamangun Jakarta Timur

Phone: (021) 4890308

Email: info@customs.go.id

Website: www.beacukai.go.id

Ministry of Trade of the Republic of Indonesia (Kementerian Perdagangan)

Address: M. I. RidwanRais Road, No. 5 Central Jakarta 1011

Phone: (021) 3858171

Email: contact.us@kemendag.go.id

Website: www.kemendag.go.id

Directorate General for Livestock and Animal Health Service of Ministry of Agriculture (Direktorat Jenderal Peternakan Kementerian Pertanian)

Address: Building C Gedung Kementerian Pertanian, Jl. Harsono RM No. 3 PasarMinggu, Jakarta 12550 - Indonesia

Phone: 021 7815580 - 83

Fax: 021 7815783

Email: ditjennak@deptan.go.id

Website: ditjennak.pertanian.go.id

Directorate General for Agriculture Infrastructures of Ministry of Agriculture (Direktorat Jenderal Sarana dan Prasarana Kementerian Pertanian)

Address: Building D Gedung Kementerian Pertanian, Jl. Harsono RM No. 3 PasarMinggu, Jakarta 12550 – Indonesia

Phone/Fax: (021) 7816086

Email: -

Website: psp.pertanian.go.id

Resources

Health Certificate of Origin

Ministry of Agriculture
Directorate of Animal Health
Director General for Livestock Services (DGLS)
Address: Building C, 9th Fl.
Jl. +Harsono RM No. 3 Ragunan
Jakarta 12550
Ph/Fax: +6221-781-5783

Health Certificate for Food Products

National Agency of Drug and Food Control (BPOM)
Sub-Directorate of Certification for Food Products
Directorate of Inspection and Certification for Food Products
Deputy III for Dangerous Materials and Food Safety Control
Building F, 2nd Fl.
Jl. Percetakan Negara No. 23
Jakarta 10560
Ph/Fax: +6221-424-1781
Fax: +6221-425-3857
Email: insertipangan@pom.go.id

Phytosanitary Certificate

Ministry of Agriculture
Agency for Agricultural Quarantine
Building E, 5th Fl.
Jalan Harsono RM No. 3 Ragunan
Jakarta 12550
Ph/Fax: +6221-782-1367

Sanitary Certificate (Meat Products)

Directorate of Veterinary Public Health
Directorate General for Livestock Services (DGLS)
Ministry of Agriculture
Building C, 8th Fl.
Jl. Harsono RM No. 3 Ragunan
Jakarta 12550
Ph: +6221-781-5780
Fax: +6221-782-7466

Trade Fairs in Indonesia

Indo Agri Expo

Venue: Jakarta International Expo Kemayoran

Date: 28-30 March 2019

Indo Agri Expo was before named From Farm To Table (FFTT) Expo and was organized by Krista Media, the expo company which also organizes SIAL InterFOOD 2018 in Indonesia. Indo Agri Expo 2019 has eight focus on the show, such as; livestock breeding equipment machine; fishery breeding equipment machine; crop and plan sectors, gardening, vegetable gardens, environment and nature; machine & equipment; agricultural services and professions; agricultural processing machinery & equipments; agriculture raw material & products; and horticulture & gardening.

17th Modern Agriculture Expo

Venue: Jakarta Convention Center

Date: 10 – 13 May 2019

IMA is a premier B2B event specially designed to showcasing agricultural technology, equipment and services to enhance the development of agriculture in Indonesia. This event is supported by Indonesian Ministry of Agriculture, Indonesian Ministry of Industry, etc. Indonesia Modern Agriculture Expo is a platform or a meeting point for dealing manufactures, importers and the farmers to set up ideal business cooperation.

18th Indonesia Agro Food Expo

Venue: Jakarta Convention Center

Date: 10 – 13 May 2019

Indonesia AgroFood Expo is an exhibition on the commodities and products of agriculture: food crops, horticulture, plantation, forestry, animal husbandry and fishery, processed food products and agriculture technologies. The exhibition has been organized since 2001. Indonesia AgroFood Expo will focus on the commodities and products of horticulture (Indonesia Fruits & Vegetables Expo), spices (Indonesia Spices Expo 2018), cacao, coffee and tea (Indonesia Cacao, Coffee & Tea Expo 2018).

15th Food Hotel Indonesia

Venue: Jakarta International Expo Kemayoran

Date: 24-27 July 2019

As the country's leading international food and hospitality event, attracting key trade-only buyers from all sectors of the hospitality and retail industry, FHI gives international companies an undisputed entry point into this thriving and lucrative market. The 2019 edition will be largest in the shows history with over 35,000 m2 exhibiting space, providing a platform for 1,600 international exhibitors to connect with over 30,000 qualified buyers.

Abbreviations

AEC	ASEAN Economic Community
AFTA	ASEAN Free Trade Agreement
AGP	Antibiotics Growth Promoters
AMF	Anhydrous Milk Fat
ALSINTANI	Indonesian Agriculture Tools and Machinery Association (Asosiasi Pengusaha Alat dan Mesin Pertanian Indonesia)
ASEAN	Association of South East Asian Nations
APFINDO	Indonesian Meat Producer and Feedlot Association (Asosiasi Produsen Daging dan Feedlot Indonesia)
APPI	Fertiliser Producer Association Indonesia (Asosiasi Produsen Pupuk Indonesia)
ASOHI	Indonesia Veterinary Drugs Association (Asosiasi Obat Hewan Indonesia)
BBPMSOH	Animal Drugs Quality Testing and Certification Agency (Balai Besar Pengujian Mutu dan Sertifikasi Obat Hewan)
BPJPH	Halal Product Guarantee Agency (Badan Penyelenggara Jaminan Produk)
B POM	National Agency of Drug & Food Control (Badan Pengawas Obat dan Makanan)
BPS	Indonesian Statistics Center (Badan Pusat Statistik)
BritCham	British Chamber of Commerce
BULOG	Indonesian State of Logistics Agency (Badan Urusan Logistik)
BKPM	Indonesian Investment Coordinating Board (Badan Koordinasi Penanaman Modal)
CMS	Cytoplasmic Male Sterile
COA	Certificate of Analysis
DanCham	Danish-Indonesian Business Chamber
EIBN	EU-Indonesia Business Network
EKONID	German-Indonesian Chamber of Industry and Commerce
EU	European Union
EuroCham	The European Business Chamber of Commerce in Indonesia
EWINDO	PT. East West Seed Indonesia
FFPO	Fresh Food of Plant Origin
DOC	Day Old Chicks
GBG	Global Business Guide

GDP	Gross Domestic Product
GGL	Great Giant Livestock
GGP	Great Giant Pineapple
GMO	Genetically Modified Products
GMP	Good Manufacturing Practice
HBAH	Product of Animal Origin Material
IBAI	Italian Business Association Indonesia
IDN	Republic of Indonesia
IFCCI	French Chamber of Commerce & Industry Indonesia
INA	Indonesian Benelux Chamber of Commerce
JICA	Japan International Cooperation Agency
Kaitec	Korea Academy of Industrial Technology
KCL	Fertiliser – Potassium Chloride
LIPI	Indonesian Institute of Science
LPH	Halal Inspection Institution (Lembaga Pemeriksa Halal)
KHS	CV. Karya Hidup Sentosa
MUI	Indonesian Council of Ulama (Majelis Ulama Indonesia)
MP3EI	Masterplan for Acceleration and Expansion of Indonesian Economy (Masterplan Percepatan dan Perluasan Pembangunan Ekonomi Indonesia)
MYS	Federation of Malaysia
NFDM	Non-Fat Dry Milk
NAMPA	National Meat Processor Association Indonesia
NPB	Registration Number Item (Nomor Pendaftaran Barang)
NPK	Fertiliser – Nitrogen, Phosphorus, Potassium
NRP	Product Registration Number (Nomor Registrasi Produk)
PHL	Republic of the Philippines
RIPH	Recommendation to Import Horticultura Products
SGP	Republic of Singapore
SNI	Indonesian National Standard (Standar Nasional Indonesia)
SHS	PT. Sang Hyang Seri
SOE	State-Owned-Enterprise

SPI	Import Permit Letter (Surat Persetujuan Impor)
SP3	Fertiliser – Sub Project 3
THA	Kingdom of Thailand
PT	Limited Liability Company (Ltd. – Perseroan Terbatas)
UHTM	Ultra-High-Temperatured Milk
UU-JPH	Halal Product Guarantee (Undang-Undang tentang Jaminan Produk Halal)
VNM	Socialist Republic of Vietnam

References

- Adventa, E. Monsanto memanen benih jagung. Kontan 21 Maret 2017. Available at: <https://industri.kontan.co.id/news/monsanto-memanen-benih-jagung>
- Alfi, A.N. Hortikultura dan Perkebunan Jadi Fokus di 2018. Bisnis Indonesia 30 Mei 2017. Available at: <http://industri.bisnis.com/read/20170530/99/657927/hortikultura-dan-perkebunan-jadi-fokus-di-2018>
- Alfi, A.N. Kementan Siapkan Anggaran untuk Dorong Produksi Alsintan di Tanah Air. Bisnis Indonesia 5 Mei 2017. Available at: <http://industri.bisnis.com/read/20170505/99/651216/kementan-siapkan-anggaran-untuk-dorong-produksi-alsintan-di-tanah-air>
- Alfi, A.N. PASAR BENIH: Sang Hyang Seri Incar Segmen Komersial. Bisnis Indonesia 5 December 2017. Available at: <http://industri.bisnis.com/read/20171205/99/715292/pasar-benih-sang-hyang-seri-incar-segmen-komersial->
- Alfi, A.N. Pemerintah Pacu Produksi Kedelai Lokal. Bisnis Indonesia 8 Oktober 2017. Available at: <http://industri.bisnis.com/read/20171008/99/696957/pemerintah-pacu-produksi-kedelai-lokal>
- Alfi, A.N. 40 Perusahaan Mendaftar untuk Lisensi Alat Mesin Pertanian. Bisnis Industri 24 Agustus 2017. Available at: <http://industri.bisnis.com/read/20170824/99/683838/40-perusahaan-mendaftar-untuk-lisensi-alat-mesin-pertanian>
- Alfi, A.N. WAJIB IMPOR SAPI INDUKAN : Industri Penggemukan Tertatih. Bisnis Indonesia 12 December 2017.. Available at: <http://jakarta.bisnis.com/read/20171212/452/717329/wajib-impor-sapi-indukan-industri-penggemukan-terlatih>
- Amenan, Amrozi. Kebutuhan Pupuk Majemuk Akan Capai 3 Juta Ton. Berita Satu 3 January 2016. Available at: <http://www.beritasatu.com/ekonomi/337637-kebutuhan-pupuk-majemuk-akan-capai-3-juta-ton.html>
- Antara News 19 December 2017. Produk daging olahan Indonesia tembus Australia. Available at: <https://www.antaraneews.com/berita/672024/produk-daging-olahan-indonesia-tembus-australia>
- Asosiasi Rantai Pendingin Indonesia (Indonesian Cold Chain Association). Cold Chain Data 2017. Available at: <https://arpionline.org/cold-chain-data/>
- Australian Center for International Agricultural Research (ACIAR), Improving Indonesia's Beef Industry, 2002. Availabe at: <http://ageconsearch.umn.edu/bitstream/114076/2/mn95.pdf>
- Aziliya, Dara. Bisnis Indonesia 9 October 2017. Greenfields Tingkatkan Populasi Sapi Perah.. Available at: <http://industri.bisnis.com/read/20171009/99/697487/greenfields-tingkatkan-populasi-sapi-perah>
- Basith, Abdul. Kemtan menggelar program 1.000 desa organic. Kontan 19 Maret 2018. Available at: <https://industri.kontan.co.id/news/kemtan-menggelar-program-1000-desa-organik>

- BATAN (2017). Kota Semarang memanfaatkan Padi Sidenuk untuk hasilkan Beras Organik. Available at: <http://www.batan.go.id/index.php/id/kedeputan/pendayagunaan-teknologi-nuklir/diseminasi-dan-kemitraan/3867-sidenuk-organik>
- BMI Research, Indonesia Agribusiness Report, 19th Oct 2015. Availabe at: <http://store.bmiresearch.com/indonesia-agribusiness-report.html>
- Budi, Kurniasih. FAO Apresiasi Kinerja Kementan Memajukan Industri Pertanian. Kompas Juli 2018. Available at <https://ekonomi.kompas.com/read/2018/07/04/220548526/fao-apresiasi-kinerja-kementan-memajukan-industri-pertanian>
- Buletin Konsumsi Pangan Semester 2 2017. Data and Information System Center at Ministry of Agriculture. Available at: http://epublikasi.setjen.pertanian.go.id/epublikasi/buletin/konsumsi/2017/Buletin_Konsumsi_Pangan_Semester_2_2017/files/assets/basic-html/page69.html
- Cargill 23 February 2017. Joint Venture (JV) Cargill – So Good Food dipilih oleh PT Rekso Nasional Food (McDonald’s Indonesia) sebagai pemasok produk ayam di Indonesia. Available at: <https://www.cargill.co.id/id/2017/joint-venture-jv-cargill-so-good-food-dipilih-oleh>
- Central Bureau of Statistics. Dairy Cattle Population according to Provinces 2000-2016. Available at: <https://www.bappenas.go.id/download.php?id=14936?id=14936>
- Dairy Australia. 2018 Market Brief Indonesia March 2018.
- Darmawan, Baso. 2017. Indonesia Dairy and Products Annual 2017. GAIN Report ID 1724.
- Directorate General of Plantation (Ministry of Agriculture). Indonesian Plantation Statistics: Sugarcane 2015-2017. Available at: <http://ditjenbun.pertanian.go.id/tinymcpuk/gambar/file/statistik/2017/Tebu-2015-2017.pdf>
- Durban, Matthew. Australian Trade Website. Insight - Indonesia on the hunt for agtech. Available at: <https://www.austrade.gov.au/news/insights/insight-indonesia-on-the-hunt-for-agtech-innovations>
- European Commision, Agrifood Trade Statistical Factsheet EU-Indonesia, 2017. Availabe at: https://ec.europa.eu/agriculture/sites/agriculture/files/trade-analysis/statistics/outside-eu/countries/agrifood-indonesia_en.pdf
- Euro Monitor August 2017. Dairy in Indonesia. Available at: <https://www.euromonitor.com/dairy-in-indonesia/report>
- FAO, Abattoir Development - Recommendations, Indonesia Overview, 2008. Available at: <http://www.fao.org/docrep/010/ai410e/AI410E08.htm>
- Faisal, Muhammad. Waspada Medan 2 August 2018. Ultra Jaya Berdayakan 50 Ribu Peternak Sapi, Siap Buka Peternakan di Brastagi. Available at: <http://waspadamedan.com/index.php/2018/08/02/ultra-jaya-berdayakan-50-ribu-peternak-sapi-siap-buka-peternakan-di-brastagi/>

- Food Navigator-Asia, Fonterra breaks ground on its biggest SE Asia site, 26th Mar 2014. Available at: <http://www.foodnavigator-asia.com/Business/Fonterra-breaks-ground-on-its-biggest-SE-Asia-site>
- Food Navigator-Asia, Look to Indonesia for Opportunities during Ramadan, says Nielsen, 31th Aug 2011. Available at: <http://www.foodnavigator-asia.com/Markets/Look-to-Indonesia-for-opportunities-during-Ramadan-says-Nielsen>
- Food Outlook Analysis by Ministry of Trade of Indonesia. Available at: http://bPPP.kemendag.go.id/media_content/2017/08/Analisis_Outlook_Pangan_2015-2019.pdf
- GAPKI (2018). Perkembangan Mutakhir Industri Minyak Sawit Indonesia. Available at: <https://gapki.id/news/3971/perkembangan-mutakhir-industri-minyak-sawit-indonesia>
- Gideon, Arthur. Produksi Terus Naik, Swasembada Jagung Bisa Terwujud Akhir 2017. Liputan6 13 Juli 2017. Available at: <https://www.liputan6.com/bisnis/read/3021613/produksi-terus-naik-swasembada-jagung-bisa-terwujud-akhir-2017>
- Gumilar, Pandu. Jelang Ramadan dan Lebaran, Pasokan Ayam Dipastikan Aman. Bisnis Indonesia 22 April 2018. Available at: <http://industri.bisnis.com/read/20180422/99/787322/jelang-ramadan-dan-lebaran-pasokan-ayam-dipastikan-aman>
- Gumilar, Pandu. Kementan: Impor Bibit Ayam untuk Cadangan. Bisnis Indonesia 5 March 2018. Available at: <http://industri.bisnis.com/read/20180305/99/746192/kementan-impor-bibit-ayam-untuk-cadangan>
- Gumilar, Pandu. Produksi Ayam Ras Diprediksi Surplus Sampai 2021. Bisnis Indonesia 18 April 2018. Available at: <http://industri.bisnis.com/read/20180418/99/785913/produksi-ayam-ras-diprediksi-surplus-sampai-2021>
- Gumilar, Pandu. PT Berdikari Terjun ke Bisnis Perunggu. Bisnis Indonesia 5 March 2018. Available at: <http://industri.bisnis.com/read/20180305/99/746066/pt-berdikari-terjun-ke-bisnis-perunggu>
- Hafiyyan. Bisnis Indonesia 5 April 2018. Pendapatan Emiten Unggas Belum Sejalan dengan Laba. <http://market.bisnis.com/read/20180405/192/780942/pendapatan-emiten-unggas-belum-sejalan-dengan-laba>
- Hamdani, Trio. Produksi Kakao RI 400.000 Ton/Tahun, Cukupkah untuk Industri? Detik Finance 9 February 2018. Available at: <https://finance.detik.com/industri/d-3858769/produksi-kakao-ri-400000-tontahun-cukupkah-untuk-industri>
- Hanung & Asmara. Kemendag Terbitkan Izin Impor Daging Sapi dan Kerbau. CNBC Indonesia 22 February 2018. Available at: <https://www.cnbcindonesia.com/news/20180222143103-4-5133/kemendag-terbitkan-izin-impor-daging-sapi-dan-kerbau>
- Hartomo, Giri. Swasembada Kedelai di 2018, Kementan Siap Tambah Lahan hingga 2 Juta Ha. Okezone 3 Januari 2018. Available at:

<https://economy.okezone.com/read/2018/01/03/320/1839492/swasembada-kedelai-di-2018-kementan-siap-tambah-lahan-hingga-2-juta-ha>

Haryadi, Malvyandie. Masyarakat Indonesia Masih Kurang Konsumsi Sayuran dan Buah. *Tribun News* 24 April 2018. Available at: <http://www.tribunnews.com/kesehatan/2018/04/24/masyarakat-indonesia-masih-kurang-konsumsi-sayuran-dan-buah>

Helena J. Purba – Indonesian Center for Agricultural Socio Economic and Policy Studies. *The Dynamics of Beef Supply Chain in Indonesia*

Indonesia Investments, Cocoa, (n.d.). Available at: <http://www.indonesia-investments.com/id/bisnis/komoditas/kakao/item241>

Infovet Website. 1 MARET 2017, PENDAFTARAN OBAT HEWAN HARUS VIA ONLINE. Available at: <http://www.majalahinfovet.com/2017/03/1-maret-2017-pendaftaran-obat-hewan.html>

JAPFA Comfeed Indonesia, Beef Division, n.d. Available at: <http://www.japfacomfeed.co.id/beef.html> Kaber Indonesia, Kelola Sampah Dalam Program Jokowi-JK untuk Indonesia Go Organik, 3rd Oct 2014. Available at: <http://www.kabarindonesia.com/berita.php?pil=20&jd=Kelola+Sampah+Dalam+Program+Jokowi-JK+untuk+Indonesia+Go+Organik&dn=20140930103304>

Kanal 14 October 2017. Untung Maksimum Dari Daging Premium. Available at: <http://validnews.co/Meraup-Untung-Maksium-Dari-Daging-Premiun-wRN>

Khudori. Pertanian Indonesia di Era Masyarakat Ekonomi ASEAN. *GeoTimes* 18 January 2016. Available at: <https://geotimes.co.id/tokoh/kolom-jokowi/pertanian-indonesia-di-era-masyarakat-ekonomi-asean/>

Kontan 14 December 2018. Realisasi impor sapi bakalan tergerus. Available at: <http://nasional.kontan.co.id/news/realisasi-impor-sapi-bakalan-tergerus>

Kontan 30 Juni 2018. Impor sapi bakalan bisa semakin turun. Available at: <https://industri.kontan.co.id/news/impor-sapi-bakalan-bisa-semakin-turun>

Kontan 7 February 2018. Santori ekspor 600 kg daging wagyu Ke Myanmar. Available at: <https://industri.kontan.co.id/news/santori-ekspor-600-kg-daging-wagyu-ke-myanmar>

KPMG International, ASEAN Economic Community 2015, 2014, p. 8. <https://www.kpmg.com/SG/en/IssuesAndInsights/ArticlesPublications/Documents/Tax-Itax-The-ASEAN-Economic-Community-2015.pdf>

Kusuma, Hendra. Ini Sederet Pangan yang Diimpor RI. *Detik Finance* 3 August 2017. Available at: <https://finance.detik.com/berita-ekonomi-bisnis/d-3584236/ini-sederet-pangan-yang-diimpor-ri>

Kuwado, F.J. *kompas* 18 April 2017. Industri Unggas Tanah Air Masih Bermasalah. Available at: <https://regional.kompas.com/read/2017/04/18/00102481/industri.unggas.tanah.air.masih.bermasalah>

- Liputan 6 20 Mei 2018. Kenalkan Benih Jagung Tahan Jamur Bulai. Available at: <https://www.liputan6.com/regional/read/3531716/kenalkan-benih-jagung-tahan-jamur-bulai>
- Manalu, Juli E. R. Produksi Jagung 2018 Diperkirakan Naik 10%. Bisnis Indonesia 4 Februari 2018. Available at: <http://industri.bisnis.com/read/20180204/99/734260/produksi-jagung-2018-diperkirakan-naik-10>
- McDonald & Meylinah. Indonesia Grain and Feed Annual Report 2018. GAIN FAS. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Jakarta_Indonesia_3-29-2018.pdf
- Medion Bandung – Indonesia, official homepage. Available at: <http://www.medion.co.id/>
- Ministry of Agriculture. Agriculture Statistics 2017. Available at: <http://epublikasi.setjen.pertanian.go.id/arsip-perstatistikan/160-statistik/statistik-pertanian/533-statistik-pertanian-2019>
- Ministry of Agriculture. Livestock and Animal Health Statistics 2017. [http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_\(ebook\).pdf?time=1505127443012](http://ditjenpkh.pertanian.go.id/userfiles/File/Buku_Statistik_2017_(ebook).pdf?time=1505127443012)
- Ministry of Agriculture. Permentan 26/2017: Selain Wajib Serap Susu Lokal, Industri Wajib Bangun UPS. Available at: <http://industri.bisnis.com/read/20170904/99/686903/permentan-26-2017-selain-wajib-serap-susu-lokal-industri-wajib-bangun-ups>
- Ministry of Agriculture, Visi dan Misi, 2014. Available at: <http://www.pertanian.go.id/home/?show=page&act=view&id=5>
- Ministry of Industry. Kemenperin Pacu Daya Saing Industri Penopang Sektor Pertanian. Available at: <http://www.kemenperin.go.id/artikel/18405/Kemenperin-Pacu-Daya-Saing-Industri-Penopang-Sektor-Pertanian>
- Ministry of Industry, Konsumsi Susu Masih 11,09 Liter per Kapita, n.d. Available at: <http://www.kemenperin.go.id/artikel/8890/Konsumsi-Susu-Masih-11,09-Liter-per-Kapita>
- Ministry of Industry. Industri Kosmetik dan Jamu Mampu Serap 15 Juta Tenaga Kerja - Dunia Usaha. Available at: <http://www.kemenperin.go.id/artikel/17920/Industri-Kosmetik-dan-Jamu-Mampu-Serap-15-Juta-Tenaga-Kerja---Dunia-Usaha>
- Ministry of Trade, Kemendag Pertegas Aturan SNI, 215 Produk dalam Pengawasan, 7th Nov 2014. Available at: <http://ditjenspk.kemendag.go.id/files/pdf/2015/01/12/kemendag-pertegas-aturan-sni-215-produk-dalam-pengawasan-id0-1421036964.pdf>
- Praditya, I.I. Harga Gas Mahal, Industri Pupuk di Indonesia Kalah Saing. Liputan6 16 October 2017. Available at: <https://www.liputan6.com/bisnis/read/3130481/harga-gas-mahal-industri-pupuk-di-indonesia-kalah-saing>
- Prasojo, Masto. Peluang Bisnis Sayuran Hidroponik dan Strategi Pemasarannya. Unsur Tani 20 April 2017. Available at: <https://unsurtani.com/2017/04/peluang-bisnis-sayuran-hidroponik-dan-strategi-pemasarannya>
- Press Release 26 March 2017. Program Farmer2farmer Frisian Flag Indonesia Terbukti Mampu Tingkatkan Kesejahteraan Peternak Sapi Perah Lokal Indonesia. Available at: <http://www.frisianflag.com/indonesia/press-release-26-march-2017-program-farmer2farmer-frisian-flag-indonesia-terbukti-mampu-tingkatkan-kesejahteraan-peternak-sapi-perah-lokal-indonesia>

- <http://www.pressrelease.id/release/program-farmer2farmer-frisian-flag-indonesia-terbukti-mampu-tingkatkan-kesejahteraan-peternak-sapi-perah-lokal-indonesia>
- Pupuk Indonesia, Sekilas PT Pupuk Indonesia (Persero), n.d. Available at: <http://pupuk-indonesia.com/id/profile-pupuk-indonesia/sekilas-pihc>
- Putri, A.W. Tirta 19 November 2017. Peliknya Masalah Persusuan di Indonesia. Available at: <https://tirta.id/peliknya-masalah-persusuan-di-indonesia-cAg7>
- Raharjo, Budi. Ewindo Targetkan Produksi Benih Hortikultura 4.700-an Ton. Republika 31 January 2018. Available at: <https://republika.co.id/berita/ekonomi/pertanian/18/01/31/p3ex9v415-ewindo-targetkan-produksi-benih-hortikultura-4700an-ton>
- Rangkuti & Darmawan. GAIN Report Number ID1623. Indonesia Eases Import Rules for Meat Products. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Indonesia%20Eases%20Import%20Rules%20for%20Meat%20Products%20_Jakarta_Indonesia_8-12-2016.pdf
- Ratnasari, Elise D. Cerita 'Pahit' di Balik Manisnya Cokelat. CNN Indonesia 7 Juli 2018. Available at: <https://www.cnnindonesia.com/gaya-hidup/20180706184749-267-312123/cerita-pahit-di-balik-manisnya-cokelat>
- Ratya, M.P. Detik 5 April 2017. Nilai Ekspor Obat Hewan RI Meningkatkan Jadi Rp 26 T. Available at: <https://finance.detik.com/berita-ekonomi-bisnis/d-3466256/nilai-ekspor-obat-hewan-ri-meningkat-jadi-rp-26-t>
- Reily, Michael. Berkontribusi Besar, Sektor Peternakan Ditargetkan Tembus Pasar Dunia. Kata Data 4 July 2017. Available at: <https://katadata.co.id/berita/2018/07/04/berkontribusi-besar-sektor-peternakan-ditargetkan-tembus-pasar-dunia>
- Reily Michael. Kemendag Terbitkan Izin Impor 36 Ribu Ton Daging Sapi. Kata Data 22 February 2018. Available at: <https://katadata.co.id/berita/2018/02/22/kemendag-terbitkan-izin-impor-36-ribu-ton-daging-sapi>
- Reily, Michael. PT Berdikari Dapat Jatah Impor Daging Kerbau. Kata Data 13 April 2018. Available at: <https://katadata.co.id/berita/2018/04/13/pt-berdikari-dapat-jatah-impor-daging-kerbau>
- Reuters, Japfa Comfeed Indonesia Tbk PT, n.d. Available at: <http://www.reuters.com/finance/stocks/companyProfile?symbol=JPFA.JK#KWIUpplYxgpcQJtG.97>
- Rini, A.S. Ekspor Urea Hingga Oktober 2017 Mencapai 736.118 Ton. Bisnis Indonesia 3 January 2018. Available at: <http://industri.bisnis.com/read/20180103/257/722691/ekspor-urea-hingga-oktober-2017-mencapai-736.118-ton>
- RMOL 31 July 2016. Peternak Lebih Suka Pakai Vaksin Ilegal. Available at: <http://ekbis.rmol.co/read/2016/07/31/255178/Peternak-Lebih-Suka-Pakai-Vaksin-Ilegal->
- Rittgers, Chris. GAIN Report Number ID1819. MOT Revises Requirements on Horticultural Import Permits. Available at:

https://gain.fas.usda.gov/Recent%20GAIN%20Publications/MOT%20Revises%20Requirements%20on%20Horticultural%20Import%20Permits_Jakarta_Indonesia_7-10-2018.pdf

Sanbe Farma, official homepage. <http://www.sanbe-farma.com/>

Sari, Sri Mas. Bisnis Indonesia 24 April 2017. RI Jadi Pasar Daging dan Ayam Olahan dengan Pertumbuhan Tercepat. Available at: <http://industri.bisnis.com/read/20170424/99/647620/ri-jadi-pasar-daging-dan-ayam-olahan-dengan-pertumbuhan-tercepat>

Setiawan, Sakina R.D.S. Tahun 2017, Produksi Minyak Sawit Indonesia Naik 18 Persen. Kompas.com 30 January 2018. Available at: <https://ekonomi.kompas.com/read/2018/01/30/160213126/tahun-2017-produksi-minyak-sawit-indonesia-naik-18-persen>

Simorangkir, Eduardo. Jokowi Bangun 65 Bendungan, Petani: Panen Bisa 2 Kali Setahun. Detik.com 24 July 2018. Available at: <https://finance.detik.com/infrastruktur/d-4130168/jokowi-bangun-65-bendungan-petani-panen-bisa-2-kali-setahun>

Sinar Tani 1 August 2018. e-paper Tabloid Sinar Tani - Membangkitkan Kembali Industri Gula. Available at: http://m.tabloidsinartani.com/index.php?id=148&tx_ttnews%5Btt_news%5D=2926&cHash=39cccf533a9afb249e0707fdc7c3554

Sindo 16 Maret 2018. Pemerintah Kembangkan Startup Industri Benih. Available at: <https://economy.okezone.com/read/2018/03/16/320/1873686/pemerintah-kembangkan-startup-industri-benih>

Siregar, R.A. Pabrik Pupuk di Palembang Mulai Dibangun, Ditarget Kelar 2019. Detik Finance 11 Mei 2018. Available at: <https://finance.detik.com/industri/d-4015839/pabrik-pupuk-di-palembang-mulai-dibangun-ditarget-kelar-2019>

SNI List of National Standardisation Board. Available at: <http://sispk.bsn.go.id/SNI/DaftarList>

Subagyo. Industri pengolah hasil hortikultura minim. Antara News 27 November 2015. Available at: <https://www.antaranews.com/berita/531769/industri-pengolah-hasil-hortikultura-minim>

Sulistiyono. Industri Pengolahan Susu Sumber Peluang bagi Peternak Indonesia. Tribun News 31 Agustus 2017. Available at: <http://www.tribunnews.com/bisnis/2017/08/31/industri-pengolahan-susu-sumber-peluang-bagi-peternak-indonesia>

Sulistiyono, S.T. Pemerintah Dorong Industri Pupuk Organik Lokal. Tribun News 12 April 2017. Available at: <http://www.tribunnews.com/bisnis/2017/04/12/pemerintah-dorong-industri-pupuk-organik-lokal>

SWA Online 26 April 2013. Inilah Tujuan Pemerintah Terbitkan Aturan Impor Hortikultura yang Baru. Available at: <https://swa.co.id/swa/trends/management/inilah-tujuan-pemerintah-terbitkan-aturan-impor-hortikultura-yang-baru>

- Tempo 29 April 2017. Menteri Perdagangan Bicara Soal Konsumsi Daging Indonesia 2,9 Kg. Available at: <https://bisnis.tempo.co/read/870606/menteri-perdagangan-bicara-soal-konsumsi-daging-indonesia-29-kg>
- The World Bank Aggregated LPI Table. Available at: <https://lpi.worldbank.org/international/aggregated-ranking>
- The World Bank, Population Estimates and Projections, 2015. Available at: <http://data.worldbank.org/data-catalog/population-projection-tables>
- Tjeppey D Soedjana, Partisipasi Konsumsi Sebagai Alat Ukur Status Ketahanan Pangan Daging, Wartazoa Vol 23 No 4, 2013. Available at: <http://download.portalgaruda.org/article.php?article=278123&val=7169&title=Participation%20Rate%20as%20A%20Basis%20for%20Measuring%20Food%20Security%20Status%20of%20Meat>
- Tribun Bisnis Online, Frisian Flag Optimis Raih Penjualan Rp 7,84 T, 5th Oct 2012. Available at: <http://www.tribunnews.com/bisnis/2012/10/05/frisian-flag-optimis-raih-penjualan-rp-784-t>
- Tubas Media 24 January 2017. Penguasaan Teknologi Produk Alsintan Masih Relatif Terbatas. Available at: <http://www.tubasmedia.com/penguasaan-teknologi-produk-alsintan-masih-relatif-terbatas/#.W3Epf4zbc>
- Widarti, Peni. 2017, Saraswanti Group Bakal Pasok Pupuk NPK 400.000 Ton. Bisnis Indonesia 6 Desember 2016. Available at: <http://industri.bisnis.com/read/20161206/12/609640/2017-saraswanti-group-bakal-pasok-pupuk-npk-400.000-ton>
- Wilfridus S. Mentan: Ekspor Daging Ayam Olahan Bukti RI Bisa Bersaing. Liputan6 20 April 2018. Available at: <https://www.liputan6.com/bisnis/read/3471988/mentan-ekspor-daging-ayam-olahan-bukti-ri-bisa-bersaing>
- Winarno, Ahmad. Kementerian BUMN Targetkan Produksi Tebu Per Hektar Capai 100 Ton. Kompas.com 15 November 2017. Available at: <https://ekonomi.kompas.com/read/2017/11/15/124000626/kementerian-bumn-targetkan-produksi-tebu-per-hektar-capai-100-ton>
- World Travel & Tourism Council. Travel & Tourism: Economic Impact 2018 Indonesia. Available at: <https://www.wttc.org/-/media/files/reports/economic-impact-research/countries-2018/indonesia2018.pdf>
- Wright, Thom. GAIN Report ID1707. Indonesia Grain and Feed Annual Report 2017. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Grain%20and%20Feed%20Annual_Jakarta_Indonesia_3-30-2017.pdf
- Wright, Thom. GAIN Report Number ID1637. Indonesia Revises FFPO Import Procedures. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Indonesia%20Revises%20FFPO%20Import%20Procedures_Jakarta_Indonesia_12-13-2016.pdf and <http://apeda.gov.in/apedawebsite/menupages/summary-regulation-moa-04-2015-final.pdf>

- USDA FAS (2017). McDonald Garrett. Exporter Guide Update. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Exporter%20Guide_Jakarta_Indonesia_18-12-2017.pdf.
- USDA FAS (2017). Retail Foods Update. Available at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Retail%20Foods_Jakarta_Indonesia_26-12-2017.pdf
- USDA-FAS 13 July 2018. Trade Opportunities in Southeast Asia: Indonesia, Malaysia, and the Philippines. Available at: <https://www.fas.usda.gov/data/trade-opportunities-southeast-asia-indonesia-malaysia-and-philippines>
- Yanuar, Yudono. Tempo 15 Oktober 2017. BPJPH Berdiri, MUI Tetap Berperan dalam Sertifikasi Produk Halal. Available at: <https://bisnis.tempo.co/read/1024868/bpjph-berdiri-mui-tetap-berperan-dalam-sertifikasi-produk-halal>
- Yuniarni, Sarah. Jakarta Globe 25 August 2017. Health-Conscious Indonesians on the Rise, Growth of Nutritious Products Expected: Report. Available at: <http://jakartaglobe.id/business/protein-food-sports-drinks-demand-to-climb-as-urban-indonesians-becoming-more-health-conscious-report/>
- Yuniartha, Lidya. Kontan 19 December 2017. Impor buah turun drastis tahun ini. Available at: <https://industri.kontan.co.id/news/impor-buah-turun-drastis-tahun-ini>
- Yuniartha Lidya. Syngenta Indonesia perkiraan utilitas pabrik tetap di 2018. Kontan 14 Maret 2018. Available at: <https://industri.kontan.co.id/news/syngenta-indonesia-perkiraan-utilitas-pabrik-tetap-di-2018>
- Yunita, N. W. Kementan: Fokus Produk dalam Negeri, Tak Ada Impor Benih Jagung. Detik.com 2 November 2017. Available at: <https://finance.detik.com/berita-ekonomi-bisnis/d-3711445/kementan-fokus-produk-dalam-negeri-tak-ada-impor-benih-jagung>
- Valenta, Elisa. CNN Indonesia 24 April 2017. Rakyat Indonesia Senang Nyemil, Industri Olah Daging Tumbuh. Available at: <https://www.cnnindonesia.com/ekonomi/20170424162025-92-209779/rakyat-indonesia-senang-nyemil-industri-olah-daging-tumbuh>
- Villagers Post 16 April 2017. EKSPEDISI PADI NUSANTARA: IMPOR BENIH PADI, IMPOR BENIH PENYAKIT. Available at: <http://villagerspost.com/special-report/ekspedisi-padi-nusantara-impor-benih-padi-impor-benih-penyakit/>

About EIBN

The EIBN is a partnership project between five European bilateral chambers of commerce in Indonesia (BritCham, DanCham, EKONID, EuroCham, IBAI, and IFCCI) and two counterparts in Europe (EUROCHAMBRES, CCI Barcelona). The EIBN's aim is to promote Indonesia and ASEAN as high potential trade and investment destinations towards companies from all EU28 member states – particularly SMEs – and support them in their endeavor to explore the full market potential in Indonesia. The project was initiated and is co-funded by the EU.



Media Partner:



Disclaimer

This publication has been produced with the financial assistance of the European Union. The contents of this document are the sole responsibility of the EIBN and can under no circumstances be regarded as reflecting the position of the European Union.

The figures in this report correspond to EIBN's best estimate of value of the corresponding variables. Although due care was taken in the preparation of this publication, EIBN makes no warranty as to its accuracy or completeness and is not to be deemed responsible for any errors or loss resulting from its use. Other organizations quoted herein are in no way responsible for the content of the report or the consequences of its use.