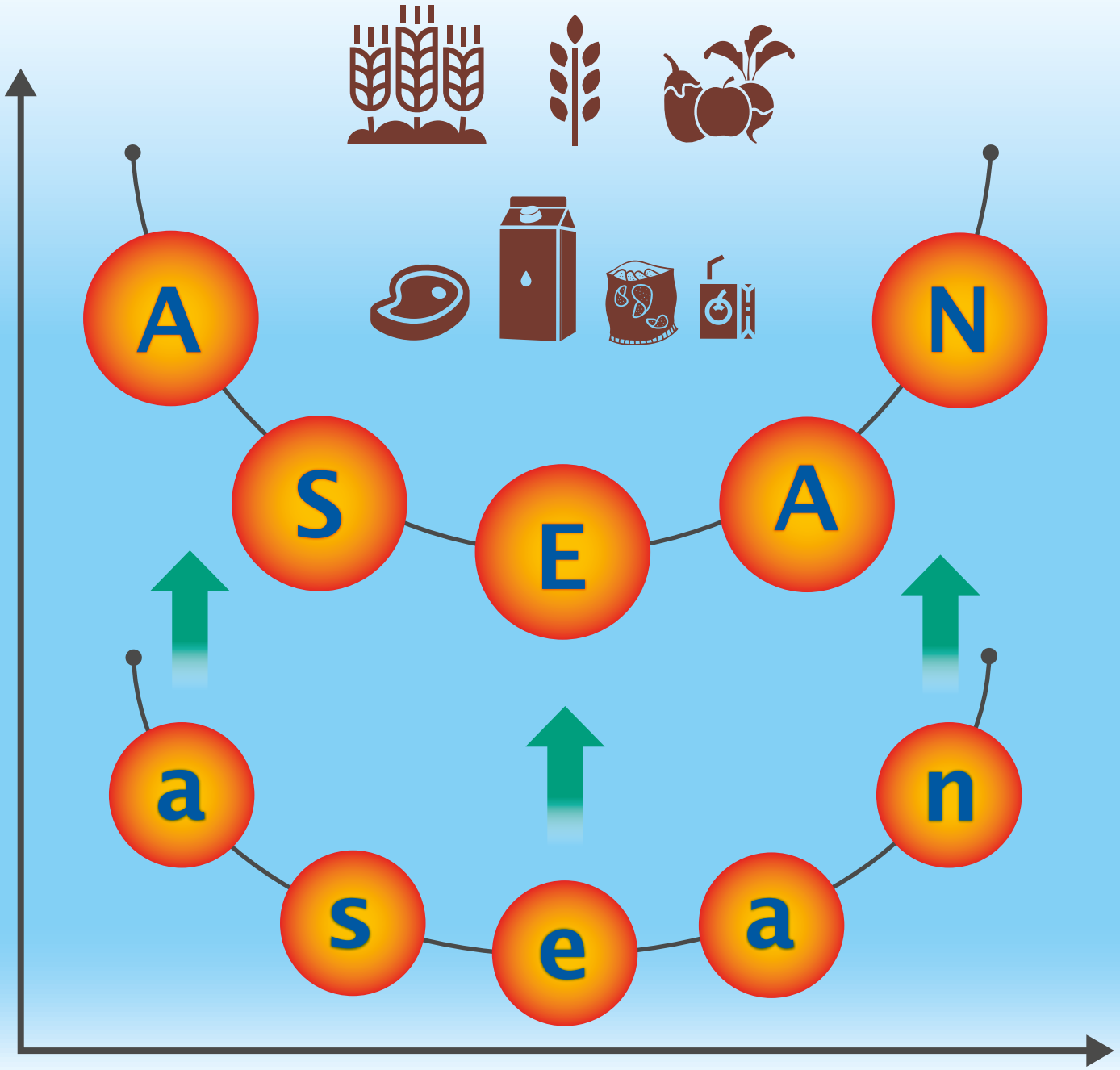
Global Value Chains in ASEAN
Agribusiness

PAPER 15
MARCH
2020



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Paper 15 / March 2020 / Global Value Chains in ASEAN: Agribusiness

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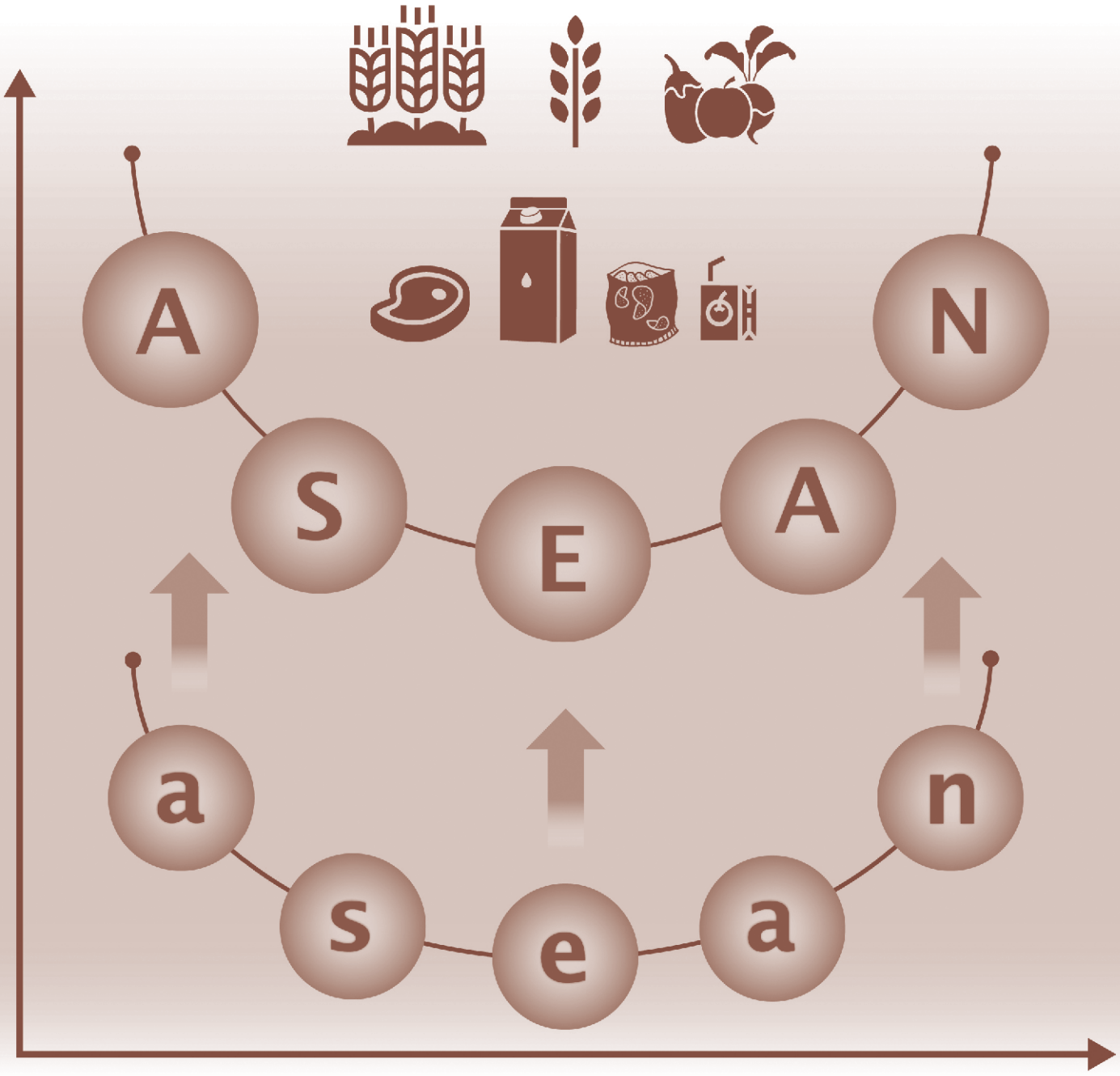

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NOTES

The terms country and economy as used in this study also refer, as appropriate, to territories or areas; the designations employed and the presentation of the material do not imply the expression of any opinion whatsoever on the part of the ASEAN-Japan Centre concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The following symbols have been used in the tables:

- Two dots (..) indicate that data are not available or are not separately reported.
- A dash (-) indicates that the item is equal to zero or its value is negligible.
- Use of a dash (-) between dates representing years, e.g., 2015–2016, signifies the full period involved, including the beginning and end years.
- Reference to "dollars" ($) means United States dollars, unless otherwise indicated.

List of papers under the project on global value chains in ASEAN by the ASEAN-Japan Centre

The current paper is the fifteenth of a 16-paper series on ASEAN global value chains. The other 15 papers were published or will be produced subsequently.

Paper 1. A Regional Perspective (first published in September 2017; revised in January 2019)
Paper 2. Brunei Darussalam (published in February 2018)
Paper 3. Cambodia (published in March 2019)
Paper 4. Indonesia
Paper 5. Lao People's Democratic Republic
Paper 6. Malaysia
Paper 7. Myanmar
Paper 8. Philippines (published in July 2017)
Paper 9. Singapore (published in August 2018)
Paper 10. Thailand (published in March 2019)
Paper 11. Viet Nam
Paper 12. Automobiles (published in January 2020)
Paper 13. Electronics
Paper 14. Textiles and clothing
Paper 15. Agribusiness
Paper 16. Tourism (published in March 2018)

Prepared by Mihoko Saito (then ASEAN-Japan Centre (AJC)) under the direction of Masataka Fujita (AJC). The author wishes to thank AJC staff for their comments. The manuscript was edited by Adam Majoe and typeset by Laurence Duchemin. Errors and omissions are only those of the author and should not be attributed to her organization.

ABBREVIATIONS

AIFS	ASEAN Integrated Food Security Framework
AJC	ASEAN-Japan Centre
AMS	ASEAN Member States
ASEAN	Association of Southeast Asian Nations
CLM	Cambodia, Lao PDR, Myanmar
EMP	Eleventh Malaysia Plan
FAF	Food, Agriculture, and Forestry
FAO	Food and Agricultural Organization of the United Nations
FDI	Foreign Direct Investment
FVA	Foreign Value Added
DVA	Domestic Value Added
DVX	Value Added Incorporated in Other Countries' Exports
GDP	Gross Domestic Product
GVC	Global Value Chain
IDP	Industrial Development Policy (Cambodia)
IFAD	International Fund for Agricultural Development
ISO	International Organization for Standardization
NEM	Non-Equity Mode
OECD	Organisation for Economic Co-operation and Development
PRAI	Principles of Responsible Agricultural Investment
RVC	Regional Value Chain
SME	Small and Medium-sized Enterprise
SPA-FS	Strategic Plan of Action on Food Security in the ASEAN Region
SPS	Sanitary and Phytosanitary Measures
TBT	Technical Barriers to Trade
TNC	Transnational Corporation
UNCTAD	United Nations Conference on Trade and Development
WTO	World Trade Organization

KEY MESSAGES

Agribusiness[1] plays an important role in the socio-economic development of the Association of Southeast Asian Nations (ASEAN). Although its share in gross domestic product (GDP) is decreasing, agriculture is still an important source of economic output, accounting for 12% of GDP in ASEAN on average in 2018. Agribusiness also provides jobs and livelihood to 100 million people, or one-sixth of the total population, and their families in ASEAN. It is a major source of trade revenue in many ASEAN countries, with ASEAN's total export value of agricultural and food products marked at $148 billion in 2018 on a customs clearance basis.

While most ASEAN countries have a strong yield of agricultural products, some countries, especially Cambodia, Lao PDR, and Myanmar (the CLM countries), lack food processing capacities and import large volumes of processed food for their domestic markets. Shifting from simple agriculture to the higher value-added food processing industry is a common priority in ASEAN.

Ensuring food security is also becoming an emerging issue in ASEAN due to the transformation of farmland to industrial and residential areas and increasing internal migration from rural to urban areas. Improving productivity to increase agricultural output is an important policy priority for addressing food security. Participating in and moving up the agribusiness global value chain (GVC) may provide ASEAN with opportunities to increase its productive capacities by using efficient foreign inputs and technologies obtained through foreign direct investment (FDI) and non-equity modes (NEM) of operation.

ASEAN is already deeply involved in the agribusiness GVC. ASEAN's value-added exports in agribusiness amounted to $102 billion in 2015.

The share of foreign inputs used in ASEAN's agribusiness exports, or the backward linkage to GVCs, was 20% of the total gross exports of ASEAN in 2015. The share of foreign value added (FVA) is higher for food products than agricultural products. China, the United States, and Japan are the three largest foreign contributors to ASEAN's agribusiness exports. The amount of ASEAN's value added incorporated in other countries' exports, also referred as forward participation in GVCs, or DVX, has been increasing since 1990.

The GVC participation (FVA + DVX) of ASEAN agribusiness has been increasing over the last two decades in both value and the share in gross exports. Regional value chains are also growing, but their growth has been less significant compared to GVCs.

Japan has been a strong supporter of agribusiness in ASEAN. There is a joint effort by the Government of Japan and the private sector to develop agribusiness in ASEAN and integrate it into GVCs.

Deepening integration in agribusiness GVCs could have both positive and negative impacts on a country's agribusiness industry. On one hand, integration into GVCs could contribute to the expansion of agricultural and food production, driven by increased foreign inputs and technology transfer. On the other hand, without appropriate policy measures, it may accelerate environmental degradation and shift production from staple foods to cash crops, raising food security concerns. Smallholder farmers and small and medium-sized enterprises (SMEs) may also be left out from GVCs.

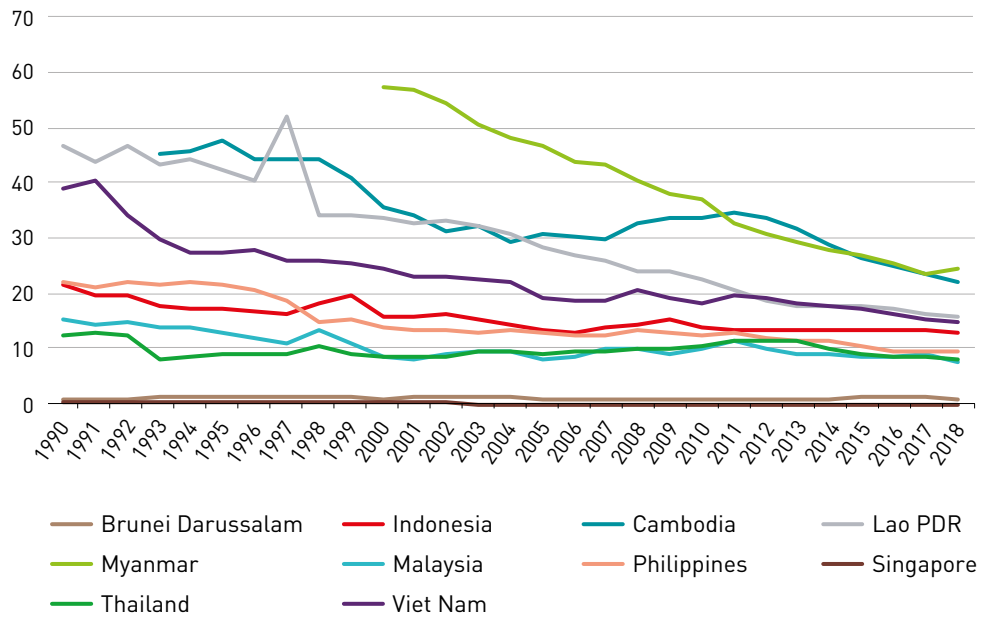
[1] Agribusiness in this paper is defined to cover only agriculture and food processing industries because of data limitations (Box 1). Other industries of the value chain, such as distribution, retailing, and other businesses (e.g. restaurants) are not included in the data and are thus excluded from the analysis.

In order to effectively participate in agribusiness GVCs, ASEAN should aim to improve the enabling environment to promote trade and attract FDI in agribusiness, which links local producers to global supply chains and triggers technology transfer and improved productivity. It is also essential to enhance the absorption capacities of local food producers, including smallholder farmers and SMEs, in order to realize the technology spillovers. Furthermore, to ensure the quality of FDI and NEM for sustainable development, governments should promote responsible investment in agriculture by supporting international practices, such as the Principles of Responsible Agricultural Investment.

Agribusiness plays an important role in the socio-economic development of the Association of Southeast Asian Nations (ASEAN). Although its share in gross domestic product (GDP) is decreasing, agriculture is still an important source of economic output, accounting for 12% of GDP in ASEAN on average in 2018.

Agribusiness[2], including the agriculture and food processing industries, is an important contributor to economic output in many ASEAN countries. In 2018, the agriculture, forestry, and fishing industry (hereafter, agriculture) alone – not including food processing industries and related services – accounted for more than a quarter of the gross domestic product (GDP) in Myanmar (25%) and 22% in Cambodia. Agriculture also contributed largely to GDP in Lao PDR (16%) and Viet Nam (15%) (Figure 1).

Figure 1. **Share of the agriculture, forestry, and fishing industry in GDP in ASEAN, value added, 1990–2018** (Per cent)



Source: World Bank Open Data (https://data.worldbank.org/indicator/NV.AGR.TOTL.ZS).
Note: Agriculture corresponds to ISIC divisions 1–5 and includes forestry, hunting, and fishing, as well as the cultivation of crops and livestock production.

According to the Organisation for Economic Co-operation and Development's (OECD) input-output table, the share of ASEAN agribusiness's value added in the value added of all industries was 17%, and the share of output in all industries' output was also 17% in 2015 (Table 1). The share of agribusiness in the economy ranges widely among ASEAN Member States. While it accounted for only 1% of all industries' output in Singapore and 2% in Brunei Darussalam, it accounted for 33% in Cambodia, 27% in the Philippines, and 25% in Viet Nam (Table 2). Agriculture's output share is

[2] See Box 1 for the definition of agribusiness in this report.

much higher in Cambodia compared to the share of output for food products, which implies that the domestic capacities of food production may be still limited in Cambodia. Other countries exhibit nearly the same or slightly higher shares of food, beverages, and tobacco in their total industries' outputs.

Table 1. **Value added and output of agribusiness compared with all industries, 2015**
(Millions of dollars and ratio)

Country	Agribusiness (Agriculture and Food)			All industries		
	Value added	Output	Ratio of value added to output	Value added	Output	Ratio of value added to output
Brunei Darussalam	131	375	0.35	13 175	22 921	0.57
Cambodia	5 887	10 042	0.59	16 984	30 075	0.56
Indonesia	171 183	324 518	0.53	833 734	1 635 254	0.51
Lao PDR	..	..	..	..	..	..
Malaysia	35 863	109 533	0.33	292 524	763 255	0.38
Myanmar	..	..	..	..	..	..
Philippines	68 980	150 795	0.46	286 121	555 126	0.52
Singapore	3 036	9 221	0.33	275 238	770 936	0.36
Thailand	63 077	150 620	0.42	378 162	917 981	0.41
Viet Nam	35 072	145 258	0.24	175 692	570 060	0.31
ASEAN Total	**383 230**	**900 363**	**0.43**	**2 271 628**	**5 265 608**	**0.43**

Source: OECD Input-Output table database 2018 edition (https://stats.oecd.org/Index.aspx?DataSetCode=IOTS).
Note: Lao PDR and Myanmar are not covered in the OECD database.

Table 2. **Share of agribusiness output in the total output of all industries, 2015** (Per cent)

Country	Agribusiness (Agriculture and Food)	Agriculture, forestry and fishing	Food products, beverages and tobacco
	Output (%)	Output (%)	Output (%)
Brunei Darussalam	2	0.5	1.2
Cambodia	33	25	8
Indonesia	20	10	10
Lao PDR	..	..	..
Malaysia	14	6	8
Myanmar	..	..	..
Philippines	27	12	15
Singapore	1	0.03	1
Thailand	16	7	9
Viet Nam	25	13	12
ASEAN Total	**17**	**8**	**9**

Source: OECD Input-Output table database 2018 edition (https://stats.oecd.org/Index.aspx?DataSetCode=IOTS).
Note: Lao PDR and Myanmar are not covered in the OECD database.

Box 1. **Definition of agribusiness in GVC data**

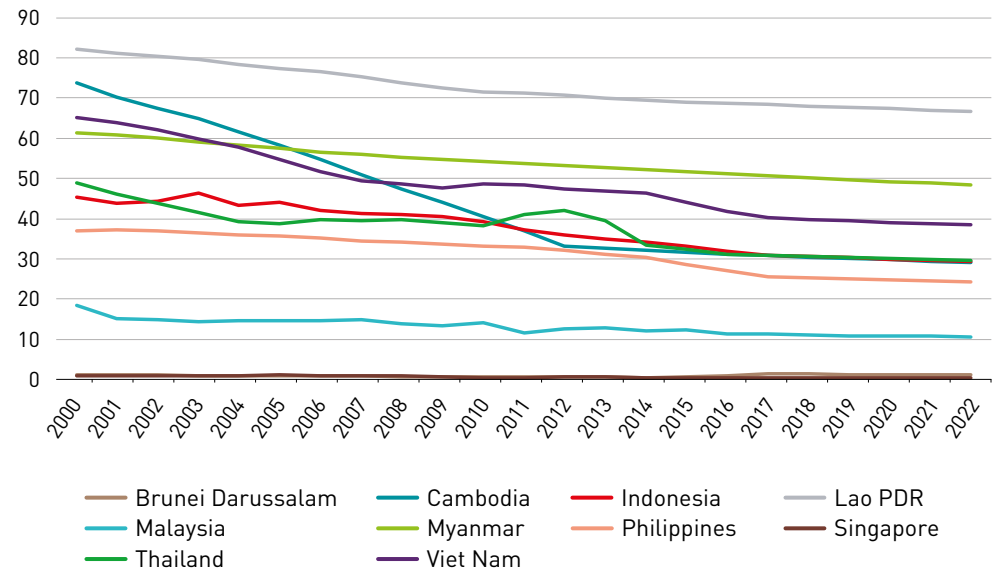
Agribusiness is a broad concept that contains the business activities performed from "farm to fork". The Food and Agricultural Organization of the United Nations (FAO) defines agribusiness as "the entire value chain, including the supply of agricultural inputs, the production and transformation of agricultural products, and their distribution to final consumers" (FAO, 2017).

While agribusiness covers a wide range of industries and services sectors, including wholesale and retail, transport and storage, and the accommodation and food industries, the data available in the OECD's input-output table or any other national account data on agribusiness is related to "agriculture, hunting, forestry and fishing" (primary) and "food, beverages and tobacco" (manufacturing). Due to the lack of data on, for example, wholesale and retail, transport and storage, and logistics, which are used specifically as part of agricultural and food products, this paper will use the sum of data for "agriculture, hunting, forestry and fishing" and "food, beverages and tobacco" as agribusiness and analyze GVCs based on that data.

Agribusiness also provides jobs and livelihood to 100 million people, or one-sixth of the total population, and their families in ASEAN.

A large share of the population in ASEAN, especially in rural areas, depends on agriculture for their livelihood. According to the International Labour Organization (ILO)'s estimate, 67% of the labour force in Lao PDR, half (50%) in Myanmar, 40% in Viet Nam, and 30% in Cambodia, Indonesia, and Thailand were engaging in agriculture in 2019. Increasing the productivity and value addition of the agro-food industry will directly impact the improvement in the livelihoods of the rural population and contribute to the achievement of inclusive growth in ASEAN (Figure 2).

Figure 2. **Share of employment in agriculture in total employment in ASEAN, 1991–2022, ILO modelled estimate** (Per cent)



Source: ILOSTAT (https://ilostat.ilo.org/data/).

Enhancing agribusiness also contributes to improving gender inequality, especially in rural areas, since the majority of women in rural areas are engaged in agriculture. In ASEAN, a large part of employment in agriculture is led by women, especially in Cambodia, Viet Nam, Lao PDR, and Thailand (Table 3).

Table 3. **Female share of employment in agriculture, most recent years available** (Per cent)

Country	Most recent year available	Female share of employment in agriculture (%)
Brunei Darussalam	2017	14.85
Cambodia	2016	52
Indonesia	2018	36.65
Lao PDR	2017	47.9
Malaysia	2017	22.78
Myanmar	2018	38.11
Philippines	2018	22.49
Singapore	2004	20.44
Thailand	2018	41.33
Viet Nam	2018	49.08

Source: ILO Stat (https://ilostat.ilo.org/data/).

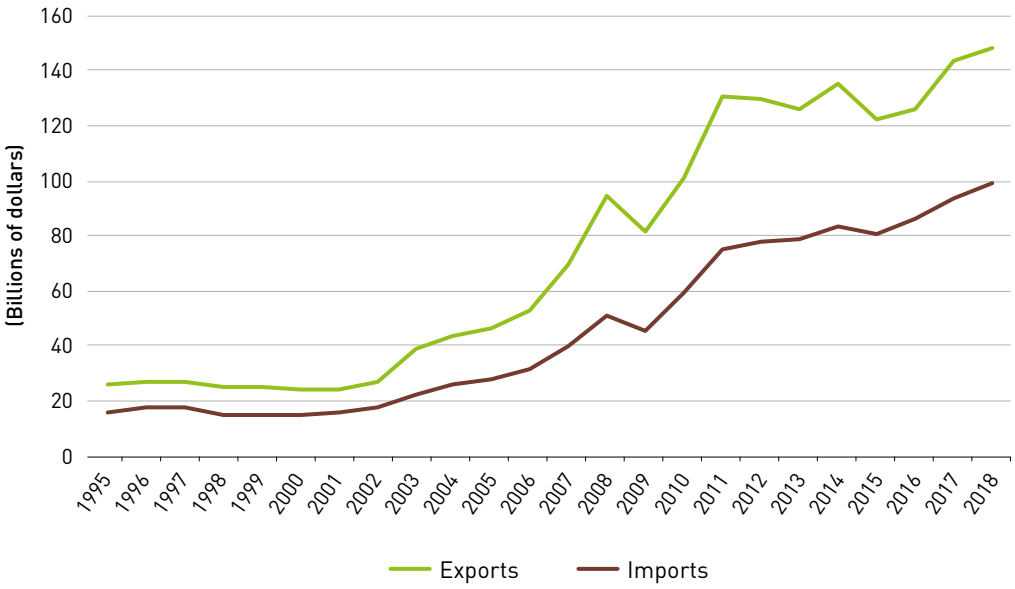
Agribusiness is a major source of trade revenue in many ASEAN countries, with ASEAN's total export value of agricultural and food products marked at $148 billion in 2018 on a customs clearance basis.

Agricultural and food products are also a major source of trade revenue. ASEAN as a whole has become a net exporter of agricultural and food products, with a value of around $148 billion exported in 2018, compared with $99 billion in imports (Figure 3). The development of agribusiness and its exports is highly influenced by foreign actors, including multinational firms and foreign buyers. ASEAN is now increasingly involved in the international agro-food trade and deeply integrated into the global value chains (GVCs) in agribusiness.

Agribusiness utilizes various resources for its exports, both of goods and services. It uses materials such as agricultural machinery, fertilizers, and chemicals. It also uses services such as those for logistics, transport, and retail. Therefore, agribusiness has extensive linkages with many other industries, creating a large multiplier effect. The multiplier effect is significant, especially for food the processing industry in all ASEAN countries, except Brunei Darussalam (Figure 4). For example, a 1-unit increase in demand for food, beverages, and tobacco in ASEAN brings a 2-unit increase in production in other industries, higher than the 1.7-unit average for all industries. The multiplier effect for the agriculture, forestry, and fishery industry is smaller than for the food industry, although its multiplier effect is higher than the all-industry average in some countries, such as Brunei Darussalam and Viet Nam (Figure 5). Enhancing agribusiness could have positive impacts on the related industries, such as the wholesale and retail and accommodation and food industries.

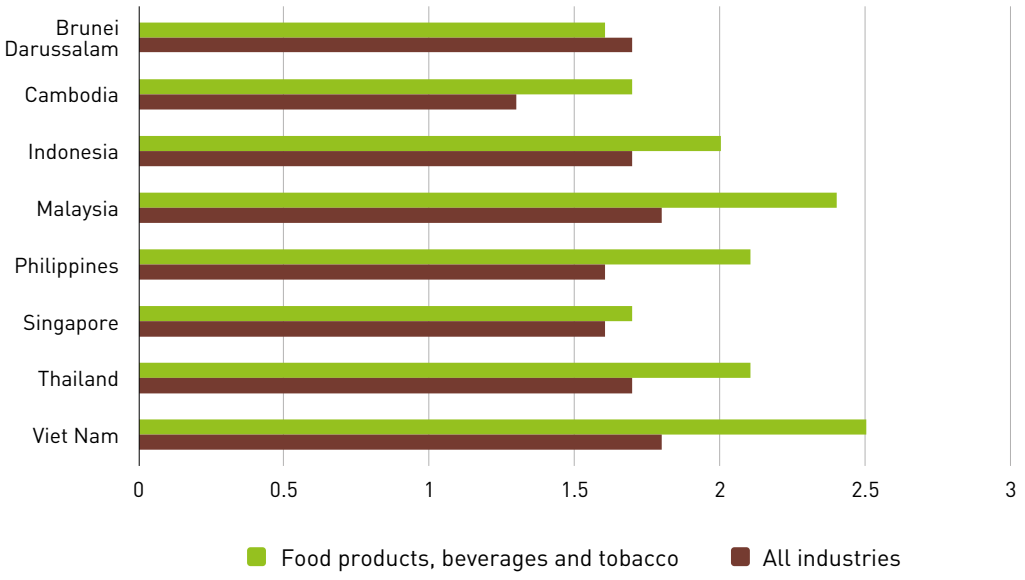
While most ASEAN countries have strong yields of agricultural products, some countries, especially Cambodia, Lao PDR, and Myanmar (the CLM countries), lack food processing capacities and import large volumes of processed food for their domestic markets. Shifting from simple agriculture to higher value-added food processing industry is a common priority in ASEAN countries.

Figure 3. **ASEAN exports and imports of agricultural and food products, 1995–2018** (Billions of dollars)



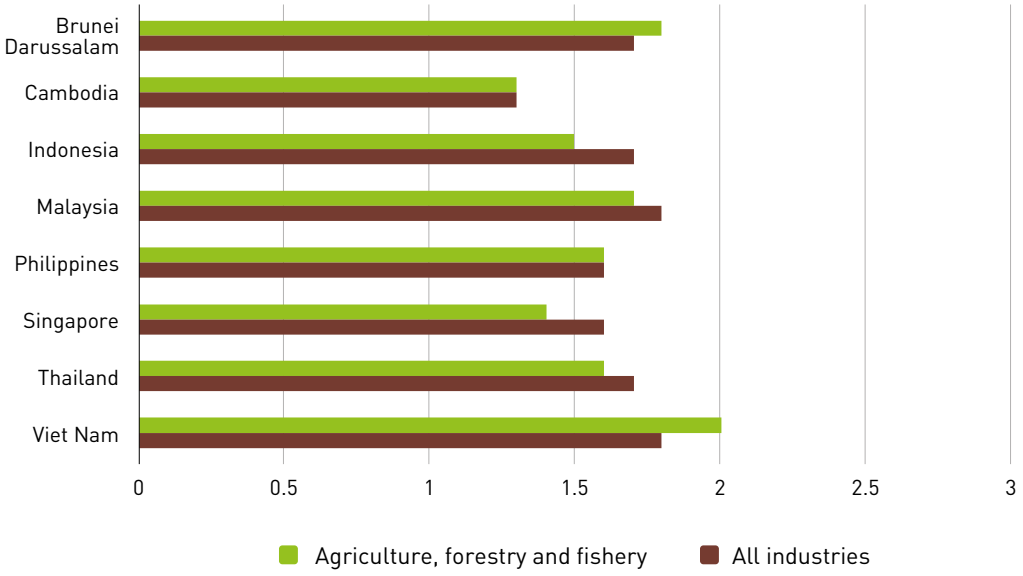
Source: UNCTAD Stats (https://unctadstat.unctad.org/).
Note: Agricultural and food products correspond to the sum of food and live animals (SITC Rev.4 Section 0), beverages and tobacco (SITC Rev. 4 Section 1), animal and vegetable oils, fats and waxes (SITC Rev.4 Section 4) and oil-seeds and oleaginous fruits (SITC Rev.4 Division 22).

Figure 4. **Multiplier effects for the food products, beverages, and tobacco industry and all industries in ASEAN, 2015**



Source: OECD Input-Output table database 2018 edition (https://stats.oecd.org/Index.aspx?DataSetCode=IOTS).
Note: Lao PDR and Myanmar are not covered in the OECD database.

Figure 5. **Multiplier effects for the agriculture, forestry, and fishery industry and all industries in ASEAN, 2015**



Source: OECD Input-Output table database 2018 edition (https://stats.oecd.org/Index.aspx?DataSetCode=IOTS).
Note: Lao PDR and Myanmar are not covered in the OECD database.

Ensuring food security is also becoming an emerging issue in ASEAN due to the transformation of farmland to industrial and residential areas and increasing internal migration from rural to urban areas.

Increased migration into urban centres is negatively impacting agricultural productivity in many ASEAN countries. For example, in Cambodia, rural areas are losing an average of 4% of their populations a year due to urban migration. A decreasing rural population places pressure on agricultural production, given the low rate of rural mechanization. In Indonesia since the 1980s, male labourers working in agriculture have been significantly enticed to jobs in construction in both urban and rural areas. In Thailand, it is reported that increasing numbers of internal immigrants are engaging in industrial sectors, which employed over 74% of Thailand's total internal migrants in 2009, compared to 64% in 1999 (FAO, 2018). Although some internal migration is due to seasonal movements, rapid urbanization in ASEAN is seen as a challenge for ensuring food security and high food production.

Improving productivity to increase agricultural output is an important policy priority for addressing food security. Participating in and moving up the agribusiness GVC may provide ASEAN with opportunities to increase its productive capacities by using efficient foreign inputs and technologies obtained through FDI and NEMs of operations.

Increasing the productive capacities of agriculture to address food security is an important policy priority in ASEAN. In 2009, in the aftermath of the 2007–2008 food price crisis, ASEAN leaders pledged to embrace food security as a permanent and high policy priority. Ensuring long-term food security and improving the livelihood of farmers in ASEAN were indicated as the two main goals of the ASEAN

Integrated Food Security (AIFS) Framework and Strategic Plan of Action on Food Security in the ASEAN Region (SPA-FS), adopted at the ASEAN Summit in 2009 (ASEAN Secretariat, 2014). Participating in and moving up the agribusiness GVCs may provide ASEAN countries with opportunities to increase their productive capacities by using the more efficient foreign inputs and technologies.

This paper will analyze the current status of agribusiness in ASEAN using data on value-added trade and describe the global and regional value chains that have been formed for agribusiness in ASEAN. This paper will also discuss the merits and good practices of GVCs and discuss the policy recommendations on how to further integrate into agribusiness GVCs.

Box 2. **GVC work undertaken by the ASEAN-Japan Centre**

This paper is part of a multiyear and first-phase research effort, producing every year value chain data for individual countries of ASEAN and analytical papers based on these data. The first year (FY2016) generated basic datasets for ASEAN as a group and for individual member states, which are used in the present paper. In FY2017–FY2018, seven papers were produced: on Brunei Darussalam (Paper 2), Cambodia (Paper 3), the Philippines (Paper 8), Singapore (Paper 9), and Thailand (Paper 10), and an industry paper on tourism (Paper 16) and a regional paper (Paper 1). In the remaining years, the AJC will continue to produce evidence-based, policy-oriented technical papers while maintaining and updating the database created in the first year.

This work also reinforces the Centre's technical cooperation programme in trade and investment by identifying which sectors to target for promotional activities in terms of value chains. It assesses the size and significance of economic partnerships between ASEAN and Japan through GVCs in different sectors, in part to identify the sectors in which the Centre should make greater promotional efforts and try to derive synergies between its technical cooperation efforts and its analytical contributions.

Output 1: Creation of the database on ASEAN GVCs

Based on the UNCTAD-Eora GVC database and additional data construction for ASEAN countries, a unique database on GVCs was established for 10 ASEAN Member States, with a special emphasis on Japan as a partner. Other important partners of ASEAN, such as China and the Republic of Korea, are included in the database. This database uses data on value-added trade derived from the Eora global, multiregional input-output (MRIO) table (www.worldmrio.com). The Centre's database is called the AJC-UNCTAD-Eora database on ASEAN GVCs. It has been made public gradually as the estimated data on GVCs have been validated. Statistics on value-added trade can lead to important policy insights for trade, investment, and development. The Centre, as part of new efforts to conduct research and policy analysis, aims to provide analysis of the relevance, impact, and patterns of value-added trade and GVCs across ASEAN and in the member countries. The database is helpful for this purpose.

Variables in the database include foreign value-added trade, domestic value-added trade, value added integrated in other countries' exports and gross exports for 26 industries in Brunei Darussalam and the CLM countries, 77 industries in Indonesia and the Philippines, 98 industries in Malaysia, 113 industries in Viet Nam, 154 industries in Singapore, 180 industries in Thailand and 402 industries in Japan, covering initially the period 1990–2015. These data are updated regularly. As of January 2019, the period covering industry data has been updated through 2015. For the bilateral country data, the data have been projected until 2018 by UNCTAD and Eora. Data are collected and estimated in a systematic manner. They are presented in a standardized industry classification in the database for comparability among ASEAN countries on the following five variables:

.../

Box 2. **GVC work undertaken by the ASEAN-Japan Centre** (Concluded)

- Foreign value added: FVA
- Domestic value added: DVA
- Value added incorporated in other countries' exports: DVX
- GVC participation: FVA + DVX
- Gross exports (total value-added exports): FVA + DVA

Output 2: Sixteen evidence-based, policy-oriented technical reports

In a collaborative effort with the Eora project and UNCTAD, the Centre's new database will be used to assess the patterns, development impacts, and policy implications of value-added trade and investment. Under this multiyear programme, 16 evidence-based and policy-oriented technical reports are being prepared: in addition to this general paper on ASEAN as a whole (Paper 1), individual reports on 10 ASEAN Member States (Papers 2–11) and five selected industries (Papers 12–16) – electronics, automobiles, textiles and clothing, agribusiness, and tourism. These industries comprise not only the central and strategically important economic activities of many ASEAN member countries but also develop significant global as well as regional value chains.

Given the importance of agribusiness and its contribution to socio-economic development and food security, ASEAN leaders have developed national and regional strategies to increase the competitiveness of agribusiness. **ASEAN Economic Community Blueprint 2025**, an overarching masterplan for ASEAN integration, provides the vision for the Food, Agriculture and Forestry (FAF) sectors from 2015 to be "competitive, inclusive, resilient and sustainable", and well-integrated with the global economy (ASEAN Secretariat, 2015a) . The concrete strategies for ensuring food security and developing a vibrant agribusiness sector are set out in two strategic documents: **The ASEAN Integrated Food Security (AIFS) Framework and Strategic Plan of Action on Food Security (SPA-FS)** and **The Vision and Strategic Plan to ASEAN Cooperation in Food, Agriculture and Forestry (2016-2025).**

The ASEAN Integrated Food Security (AIFS) Framework and Strategic Plan of Action on Food Security (SPA-FS) 2009-2013 was adopted in 2009 to ensure long-term food security in ASEAN and to improve the livelihoods of farmers in ASEAN. The renewed SPA-FS for 2015–2020 was developed following the mid-term evaluation of the previous SPA-FS in 2012 to provide the scope for cooperation among ASEAN Member States. The goals of the AIFS Framework and SPA-FS 2015-2020 succeed those of the previous one, to ensure long-term food security and nutrition and to improve the livelihoods of farmers in the ASEAN region. The SPA-FS also aims to create a favourable environment where ASEAN member states can integrate, operate, and cooperate in various aspects related to food production, processing, and trade. It also aims to provide a forum for information exchange, the transfer of new technology, and knowledge sharing with various stakeholders, including authorities, traders, scientists, research institutes, and farmers. AIFS SPA-FS 2015-2020 is comprised of five components: 1) food security and emergency/shortage relief; 2) sustainable food trade development; 3) integrated food security information system; 4) agricultural innovation; and 5) nutrition-enhancing agriculture development (ASEAN, 2014).

The Vision and Strategic Plan to ASEAN Cooperation in Food, Agriculture and Forestry (2016-2025) was adopted in 2015, with a view to achieving a "competitive, inclusive, resilient and sustainable Food, Agriculture, and Forestry (FAF) sector integrated with the global economy, based on a single market and production base contributing to food and nutrition security and prosperity in the ASEAN community" (ASEAN Secretariat, 2015). The Vision defines goals for the food, agriculture,

and forestry sector, and identifies and prioritizes the main areas of cooperation. It provides seven strategic thrusts that cover areas such as trade, food security and food safety, improved quality and quantity, and support for small producers and small and medium-sized enterprises (SMEs). The Vision complements SPA-FS 2015-2020, especially through its Strategic Thrust 3 (ensure food security, food safety, better nutrition, and equitable distribution) and Strategic Thrust 4 (increase resilience to climate change, natural disasters, and other shocks).

In addition to the regional strategies, each ASEAN Member State is also implementing agriculture/agribusiness strategies to increase their agricultural productivities and attract FDI in agribusiness industries.

Brunei Darussalam: The gross output of agriculture and agricultural and food production in 2018 was $436 million, out of which food processing accounted for 28%, or $128 million. The gross output of agricultural and food production is expected to increase to $790 million (B$1,080 million) by 2020, around 24% growth per annum. Some 8,300 persons, or 2% of the total population, were engaged in agricultural activities in 2018, out of which 4,047 persons were in food processing (Ministry of Primary Resources and Tourism of Brunei Darussalam, 2019). It is a high priority of the Government to increase domestic agricultural and food production in order to lessen the heavy dependency on imported food. In 2013, the Government launched a series of initiatives to increase agricultural production, including for livestock, to increase the self-sufficiency rate. In its agricultural investment promotion strategy, the Brunei Darussalam Government aims to "stimulate the growth of agriculture and agrifood-based industry through high-technology and export, encouraging progressive involvement of local and foreign direct investment, while focusing on high-yield production inclusive of primary and processing industry" (Ministry of Primary Resources and Tourism of Brunei Darussalam 2019). Brunei Darussalam is actively attracting foreign investment in the areas of innovation, agriculture production (especially broilers, vegetables, and cut flowers) and advanced food processing.

Cambodia: Although Cambodia's share in GDP has been decreasing in the last decade, agriculture remains the country's the key industry, accounting for 22% of GDP in 2018, the second largest among ASEAN Member States after Myanmar (World Bank Open Data). Under Cambodia's Industrial Development Policy (IDP) 2015-2025, the Royal Government aims to increase the export of processed agricultural products to reach 12% of all exports by 2025, from 8% in 2015, as part of a strategy to diversify its export basket. Promoting the agro-processing industry through integration into regional and global value chains is mentioned as the strategic approach of the IDP. The IDP also aims to increase agricultural production to serve both export and domestic markets and encourage various support industries to promote strategic sectors, including agriculture. The IDP also puts emphasis on supporting SMEs in agro-processing production. As part of the strategy to expand and modernize SMEs, the Government plans to explore the possibility of establishing agro-processing zones, such as for furniture manufacturing, rubber processing, seafood processing, and food processing for domestic use and export through public-private partnerships. It also plans to create a development and promotion fund for export-led product development using agro-processing technology. Investment in the agriculture sector in Cambodia is not significant compared to other industries and infrastructure development. In 2016, Cambodia received $478 million in investment for its agricultural sector, which was 13% of the total amount of investment received[3]. Some studies have explained that there are still notable barriers to FDI in the agro-processing sector, such as problems with land tenure and lease agreements, a lack of efficient administrative mechanisms, and weak law enforcement (BDLINK (Cambodia), 2017).

[3] See the Council for the Development of Cambodia website (http://www.cambodiainvestment.gov.kh/why-invest-in-cambodia/investment-enviroment/investment-trend.html) (accessed 11 November 2019).

Indonesia: The Government of Indonesia aims to increase the competitiveness of the agricultural sector and promote job creation and skill development in rural areas under the Grand Strategy of Agricultural Development 2015–2045. In line with the Grand Strategy, the National Medium-Term Development Plan (RPJMN 2015–2019) positioned the agriculture sector as a prime engine of economic and social development in Indonesia as well as for ensuring food security. It also focuses on infrastructure development in rural areas, access to financial services, and advanced agricultural research and technology for better productivity. It also included the development of techno parks for agriculture, animal husbandry, fisheries, and post-harvest processing, jointly implemented with private institutions and universities (Government of Indonesia, 2014). In 2015, Indonesia received $16.6 billion of investment, of which $4.4 billion was targeted to agriculture (AJC, 2017).

Lao PDR: The Lao PDR Government approved the "Agriculture Development Strategy to 2025 and Vision to the Year 2030" in 2015, with a vision to ensure "food security, producing comparative and competitive potential agricultural commodities, developing clean, safe and sustainable agriculture and shift gradually to the modernization of a resilient and productive agriculture economy, linking with rural development contributing to the national economic basis" (Ministry of Agriculture and Forestry of the Lao PDR, 2015). Promoting agricultural production and agro-processing and supporting smallholder farmers are also mentioned as high priorities in the 8th Five-Year National Socio-Economic Development Plan (2016–2020). Under the 8th Five-Year Plan, the Government aims to diversify the commercial goods produced from the industrial processing sector using agricultural and forestry raw materials and products as inputs and increasing value addition. In 2015, Lao PDR received $1 billion of investment, of which 46% was targeted for agriculture (Ministry of Agriculture and Forestry of the Lao PDR, 2015).

Malaysia: In 2015, the Government of Malaysia launched the Eleventh Malaysia Plan (EMP) 2016-2020. The EMP has six strategic thrusts for achieving the overall goal of becoming a developed country by 2020. Modernizing agriculture is one of the strategic thrusts, which has seven areas of activities: 1) improving the productivity and income of farmers, fishermen, and smallholders; 2) promoting training and youth agro-preneur development; 3) strengthening institutional support and extension services; 4) building the capacity of agricultural cooperatives and associations along the supply chain; 5) improving market access and logistics support; 6) scaling up access to agricultural financing; and 7) intensifying performance-based incentives and certification programmes (Royhan Abu Dardak (2016). In 2015, Malaysia received $118 billion of investment, of which 2% was targeted for agriculture (AJC, 2017).

Myanmar: In 2016, the former Ministry of Agriculture and Irrigation; Ministry of Livestock Fisheries and Rural Development; and Ministry of Cooperatives were merged into the Ministry of Agriculture, Livestock and Irrigation (MOALI) to address the sector's development in a more integrated and holistic approach. MOALI has been developing the Five-Year Agricultural Development Strategy (ADS) and a corresponding Investment Plan, which aims to achieve "an inclusive, competitive, food and nutrition secure and sustainable agricultural system contributing to the socio-economic well-being of farmers and rural people and further development of the national economy" (Government of the Republic of the Union of Myanmar, Ministry of Agriculture, Livestock and Irrigation, 2017). The draft Five-Year Agricultural Plan has three strategic pillars: 1) governance, 2) productivity, and 3) competitiveness. "It aims to promote inclusiveness, sustainability and resilience to climate change, development of private sector and farmers' organizations, and connectivity to market infrastructure, information and communication technology infrastructure, and power infrastructure" (Government of the Republic of the Union of Myanmar, Ministry of Agriculture, Livestock and Irrigation, 2017). In 2015, Myanmar received $3.5 billion of investment (approval base), of which 3% was targeted for the primary sector, including agriculture (AJC, 2017).

Philippines: The Government of the Philippines has positioned agribusiness as the key industry for contributing to the industrial development of the Philippine economy. The national vision for agribusiness is "to transform and upgrade the agriculture sector from traditional farming to agribusiness or industrial clusters to take advantage of opportunities in rubber, coconut, mangoes, bananas, coffee, palm oil, cacao, and other emerging high-value crops."[4] The transformation of agriculture farming into an agribusiness-driven sector contributes not only to diversifying and increasing the value of agribusiness outputs but also to the inclusive growth and rural development of the Philippines. The Government has set goals in the short run (2014–2017), medium run (2018–2021), and long run (2022–2025), with the ultimate goal of being deeply integrated into GVCs.

Singapore: Due to the scarcity of farmland, Singapore has very limited agricultural production. The Government started the development of agrotechnology parks in the 1980s to maintain self-sufficiency as farmland was decreasing rapidly, and to maximize land productivity. New technologies were constantly developed to help the local agri-industry stay competitive and highly productive, and Singapore continues to invest in R&D in agri-biotechnology to improve its agriculture.

On 1 April 2019, the Singapore Food Agency was formed as a statutory board under the Ministry of the Environment and Water Resources to oversee food safety and food security, which was formerly carried out by the former Agri-Food & Veterinary Authority of Singapore, the National Environment Agency, and the Health Sciences Authority[5].

Thailand: As part of the Government's strategy to move to smart growth and Thailand 4.0, the Government has adopted a policy to reform the agriculture sector to ease the problems faced by Thai farmers and to support national development by transitioning to "smart farming". The reform focuses on seven areas: 1) designate agricultural zoning in all provinces in accordance with each area's geographical and climatic conditions and adopt an "Agri-Map" to suggest farmers grow crops suitable for their respective farmland; 2) establish 882 learning centres to increase the efficiency of agricultural production; 3) promote the grouping of farmers and farmland for greater efficiencies, which will enhance cooperation between farmers and the public and private sectors in the form of "public-private-people partnerships"; 4) encourage farmers to produce in response to market demand and urge them to upgrade their products, including organic products, to international standards to make them more competitive in world markets; 5) set up banks for agricultural products through the grouping of farmers and their participation in management to better improve farm inventories; 6) promote teamwork through a "single command" system in order to translate and execute the reform plan by improving on the reporting lines with the provinces, overseen by the Ministry of Agriculture and Cooperatives; and 7) reduce agricultural production costs. In 2016, Thailand received $335 million in foreign investment for 55 agro-processing projects (Thailand Board of Investment, 2017).

Viet Nam: Due to its limited arable land, Viet Nam needs to improve its agricultural productivity in order to address the growing domestic demand for agro-food products as well as to increase exports. Viet Nam's agro-food sector is well integrated with international markets, and its total agro-food export value to agricultural GDP was 70%–80% in the early 2010s. Although the total value of Viet Nam's agro-food exports increased rapidly, it is commonly derived from low-value commodity sales and upgrading to higher value-added products is recognized as one of the key priorities under the Government's agricultural restructuring plan (OECD, 2015). In 2017, the Government ratified a new agriculture restructuring plan for 2017–2020. The plan aims for a GDP growth of 3% by 2020

[4] Department of Trade and Industry, Philippines, website (http://industry.gov.ph/category/agribusiness/).
[5] Singapore Food Agency website (https://www.sfa.gov.sg/).

for the agriculture sector by improving labour productivity by 3.5 % annually. The plan also aims to develop the household livestock and animal husbandry sector and seafood sector, both targeting an annual growth rate of 4.5%–5%. To improve quality and production, the plan aims to increase the use of science and technology in producing high-quality varieties, developing organic farming, reducing the use of pesticides, and growing crops that are more adaptive to climate change[6]. In 2016, Viet Nam received $294 billion of investment (approval base), of which 2% was targeted for the primary sector, including agriculture (AJC, 2017).

ASEAN is already deeply involved in the agribusiness GVC. ASEAN's value-added exports in agribusiness amounted to $102 billion in 2015.

ASEAN exports agricultural and food products to the world and within ASEAN, both as final goods and as inputs for agro-food products produced in other countries. ASEAN's participation in agribusiness GVCs has been increasing over the last two decades. In 2015, ASEAN's value-added exports in agricultural and food products accounted for $102 billion. In comparison, customs-clearance based exports in agricultural and food products from ASEAN were valued at $122 billion in 2015 (Table 4).

Table 4. **Comparison of customs-clearance based exports and value-added exports of agricultural and food products by ASEAN, 2000–2015** (Millions of dollars)

Year	Value-added exports	Customs-clearance based exports
2000	29 771	24 100
2001	28 697	24 365
2002	29 839	26 498
2003	34 388	39 388
2004	42 066	43 092
2005	50 232	46 123
2006	59 938	52 902
2007	68 486	69 251
2008	81 704	94 273
2009	65 607	81 684
2010	85 649	100 991
2011	100 310	131 011
2012	100 117	129 706
2013	103 941	125 594
2014	109 615	135 025
2015	102 451	122 538

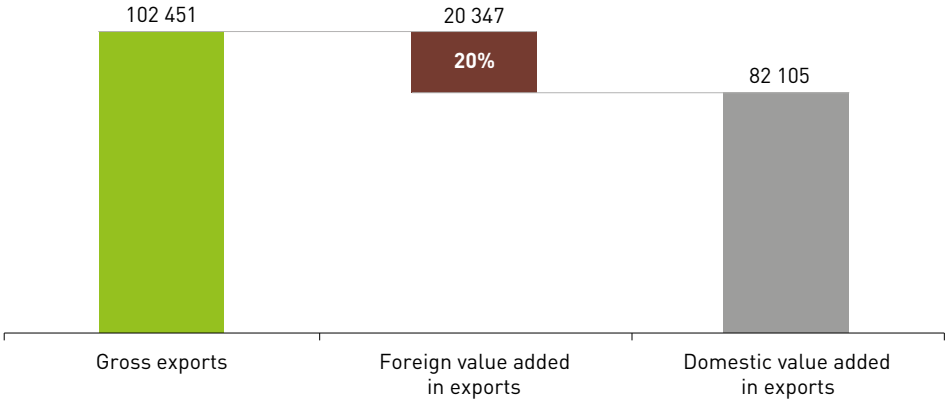
Source: UNCTAD Stats (https://unctadstat.unctad.org/) and AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: Agricultural and food products correspond to the sum of food and live animals (SITC Rev.4 Section 0), beverages and tobacco (SITC Rev. 4 Section 1), animal and vegetable oils, fats and waxes (SITC Rev.4 Section 4), and oil-seeds and oleaginous fruits (SITC Rev.4 Division 22).

[6] Ministry of Agriculture, Nature and Food Quality of Netherlands website (https://www.agroberichtenbuitenland.nl/actueel/nieuws/2018/01/04/vietnams-agriculture-restructuring-plan-2017-2020).

The share of foreign inputs used in ASEAN's agribusiness exports, or the backward linkage to GVCs, was 20% of the total gross exports of ASEAN in 2015. The share of foreign value added (FVA) is higher for food products than agricultural products. China, the United States, and Japan are the three largest foreign contributors to ASEAN's agribusiness exports.

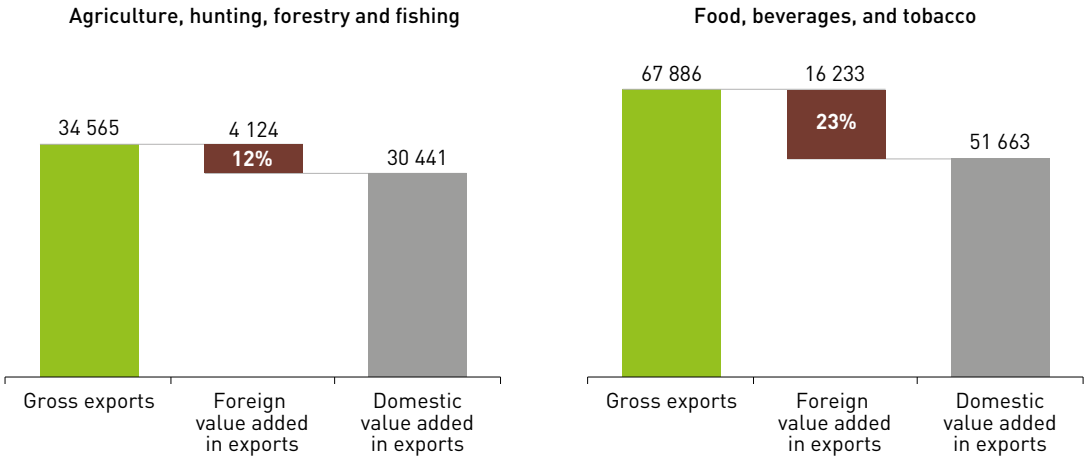
In 2015, 20% of the gross exports ($20 billion) of agricultural and food products were foreign value added (Figure 6). Food products (food, beverages, and tobacco) received more foreign inputs ($16 billion) than agriculture (agriculture, hunting, forestry and fishing), in which foreign value added was $4 billion. FVA for agriculture was 12% of gross exports, while FVA for food accounted for 23% of gross exports (Figure 7).

Figure 6. **Value-added exports from agribusiness, 2015** (Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

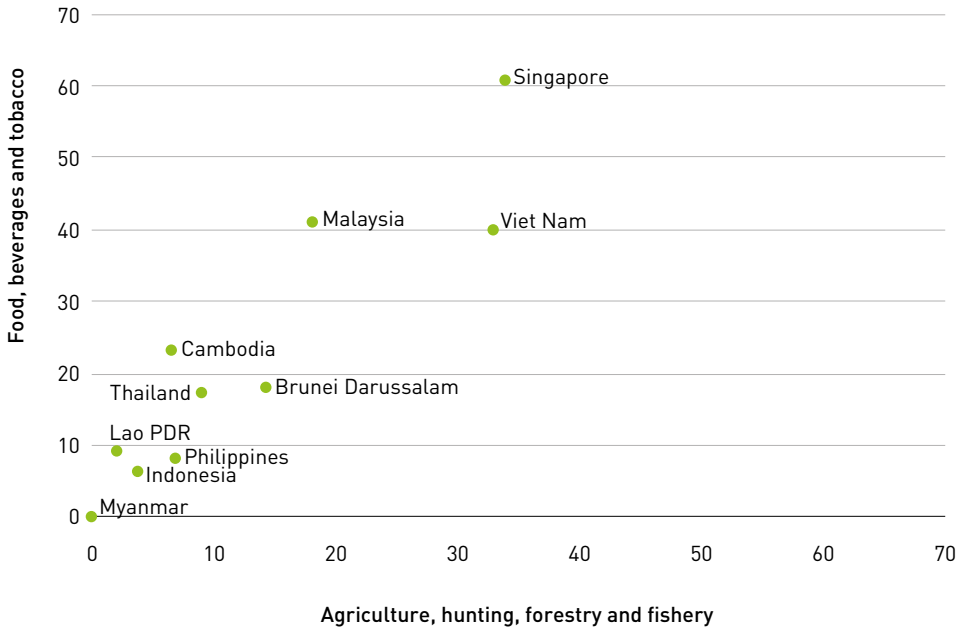
Figure 7. **Value-added exports from agriculture and food, 2015** (Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

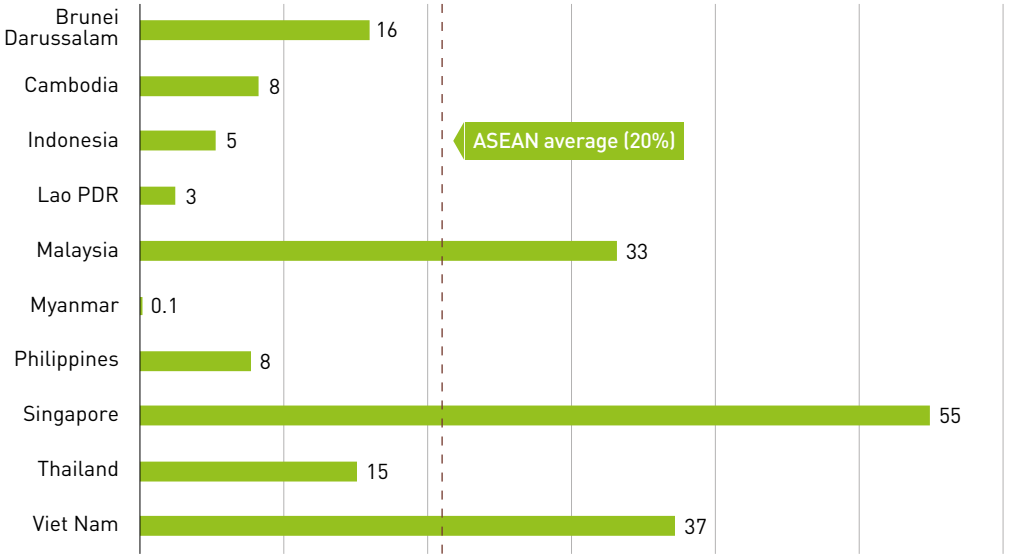
The difference in the shares of FVA between agriculture and food products can be attributed to their different GVC structures. Agriculture is linked to GVCs more as an upstream provider of materials used in other production processes, whereas the food sector is more of a downstream user of materials (Greenville, Kawasaki, and Beaujeu, 2017:20). In this regard, the share of foreign value added is higher for food products, compared to agriculture, in all ASEAN countries (Figure 8).

Figure 8. **Share of foreign value added in ASEAN's gross exports of agriculture and food products (backward linkages), 2015** (Per cent)



Among ASEAN countries, while in terms of value it is smallest ($4 million), Singapore uses the highest percentage of foreign inputs in agribusiness, with more than half (55%) of its agribusiness exports coming from foreign value addition. Viet Nam and Malaysia also display high attributes for foreign value added at 37% and 33%, respectively. On the contrary, Myanmar has only 0.1% of foreign value added in its gross exports, with 3% for Lao PDR, 5% for Indonesia, and 8% for the Philippines. These traditional agricultural countries have the common characteristic of a lower use of foreign inputs and materials. Lower productivity of agriculture in these countries derives partly from this mere fact (Figure 9). This implies that these countries have room to increase their participation in agribusiness GVCs.

Figure 9. **Share of foreign value added in agriculture and food exports, 2015** (Per cent)

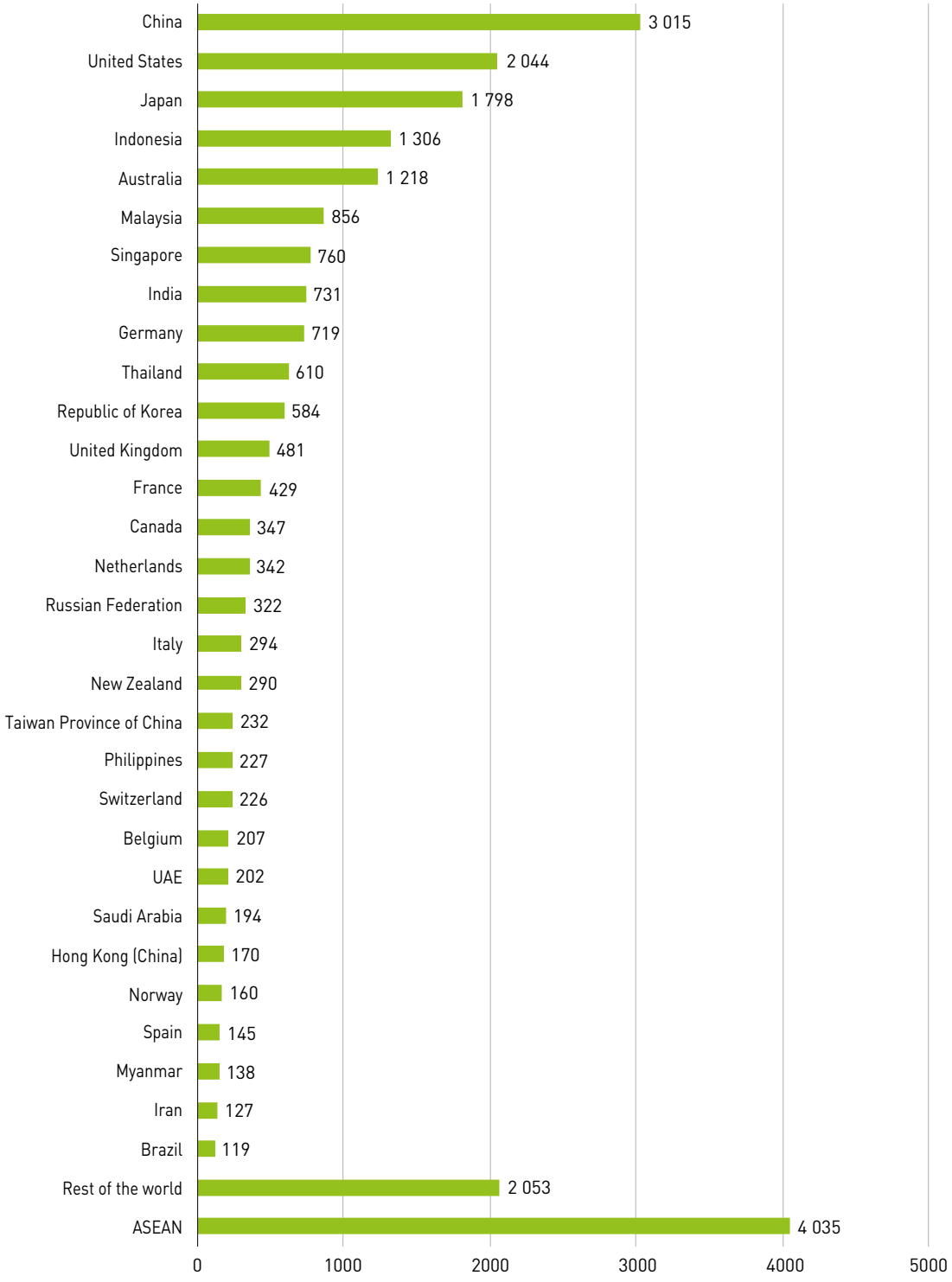


Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

The largest contributor of foreign inputs to agriculture and exports of food products is ASEAN itself, which accounted for 20% of total foreign value added, worth $4 billion, in 2015. Indonesia is the largest contributor within ASEAN with $1.3 billion, followed by Malaysia ($856 million), Singapore ($760 million), and Thailand ($610 million). ASEAN also imports and uses a significant amount of inputs from China, which accounted 15% of total foreign value added, or $3 billion, in 2015, followed by the United States (10%) and Japan (9%) (Figure 10).

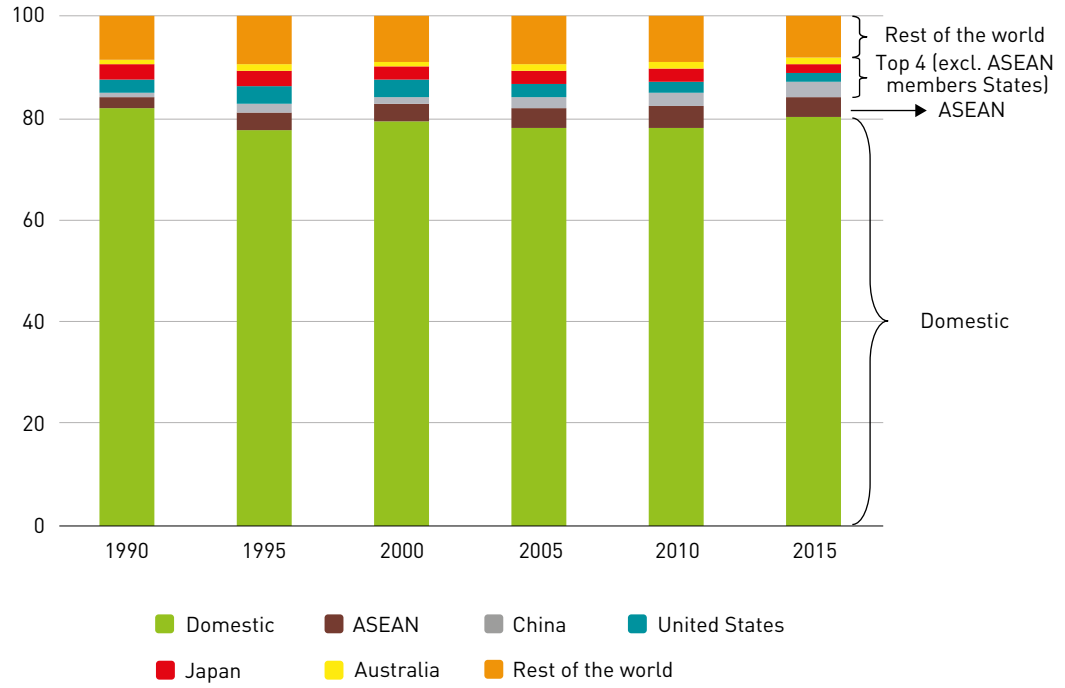
The contribution of ASEAN countries in value-added exports increased from 2% in 1990 to 4% in 2015, led by the rapid increase in value addition by Indonesia, Malaysia, Singapore and Thailand. China's share increased from 0.8% to 2.9%, increasing its influence in ASEAN's agricultural and food industries. On the contrary, the shares of the United States and Japan's value added in ASEAN's agriculture and food products exports are decreasing, from 3.3% in 1995 to 2% in 2015 for the former, and from 3.4% in 1995 to 1.5% in 2015 for the latter (Figure 11).

Figure 10. **Top 30 foreign value-added creators for ASEAN exports of agricultural and food products, 2015** (Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Figure 11. **Value-added exports of agribusiness from ASEAN by domestic, ASEAN, and other top-four foreign country value-added creators, 1990, 1995, 2000, 2005, 2010, and 2015** (Per cent)



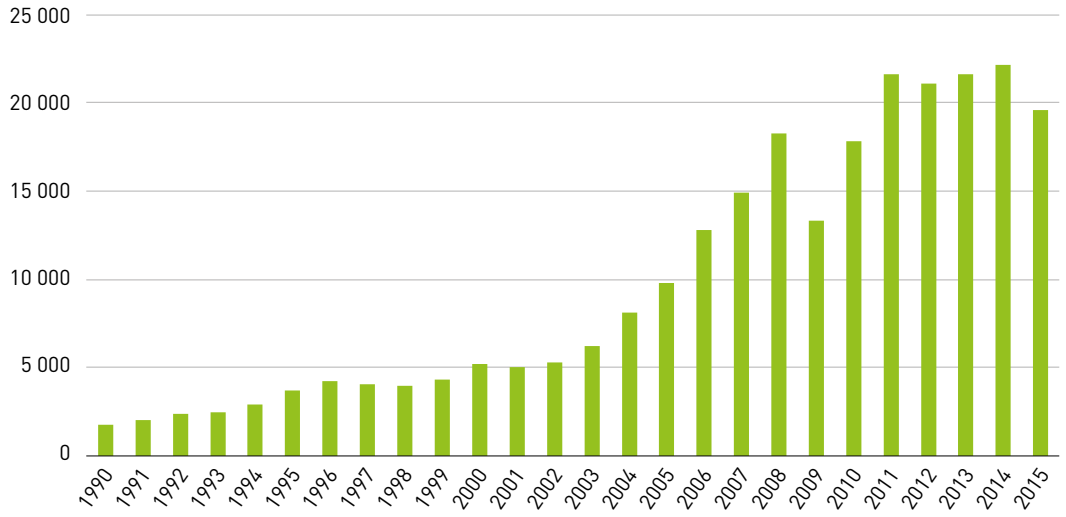
Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

The amount of ASEAN's value added incorporated in other countries' exports, also referred to as forward participation in GVCs (DVX) has been increasing since 1990.

As discussed in the previous section, ASEAN countries import inputs from other countries in ASEAN as well as countries outside of ASEAN to produce agricultural and food products. At the same time, ASEAN exports agricultural and food products to be used as inputs for processed foods and any other industries in other countries (hereby referred to as DVX). As the trade volume of agricultural and food products has increased over the last two decades, the total value of ASEAN's DVX has also been increasing, from $1.8 billion in 1990 to almost $20 billion in 2015 (Figure 12).

The total value of DVX for agriculture and food products was estimated to be $19.6 billion in 2015, out of which 68% ($13 billion) came from agriculture and 32% ($6 billion) from food products. This implies that the agricultural products are used more as inputs for the processed food produced in other countries, and, thus, have a longer GVC, whereas food products have a shorter GVC since they are mainly exported as final products and consumed in the exported countries (Table 5 and Figure 13).

Figure 12. **Value of DVX for ASEAN for agribusiness, 1990–2015** (Millions of dollars)



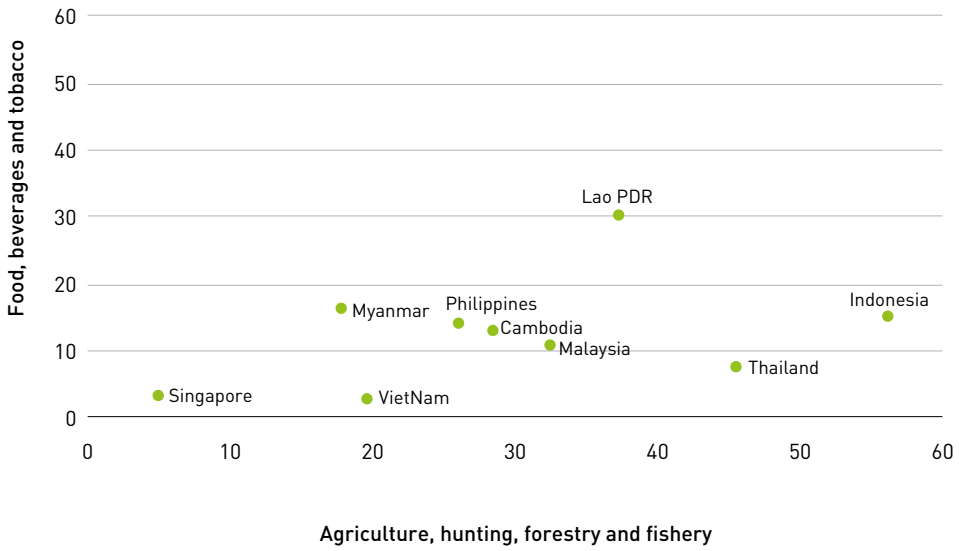
Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Table 5. **Value of DVX for ASEAN agriculture and food products, 2015** (Millions of dollars)

	Agriculture, hunting, forestry and fishery			Food, beverages, and tobacco		
Country	**DVX**	**Gross exports**	**Share of DVX in gross exports (%)**	**DVX**	**Gross Exports**	**Share of DVX in gross exports (%)**
Brunei Darussalam	16	7	232	10	6	154
Cambodia	94	327	29	4	32	12
Indonesia	5 360	9 512	56	2 118	14 270	15
Lao PDR	183	489	37	3	12	30
Malaysia	2 315	7 088	33	1 447	13 744	11
Myanmar	320	1 771	18	19	123	16
Philippines	975	3 698	26	673	4 906	14
Singapore	91	1 732	5	165	6 066	3
Thailand	3 391	7 431	46	1 840	25 129	7
Viet Nam	498	2 512	20	92	3 597	3
ASEAN TOTAL	**13 242**	**34 565**	**38**	**6 371**	**67 886**	**9**

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Figure 13. **Share of DVX for agriculture and food products in the gross exports of agriculture and food products, 2015** (Per cent)



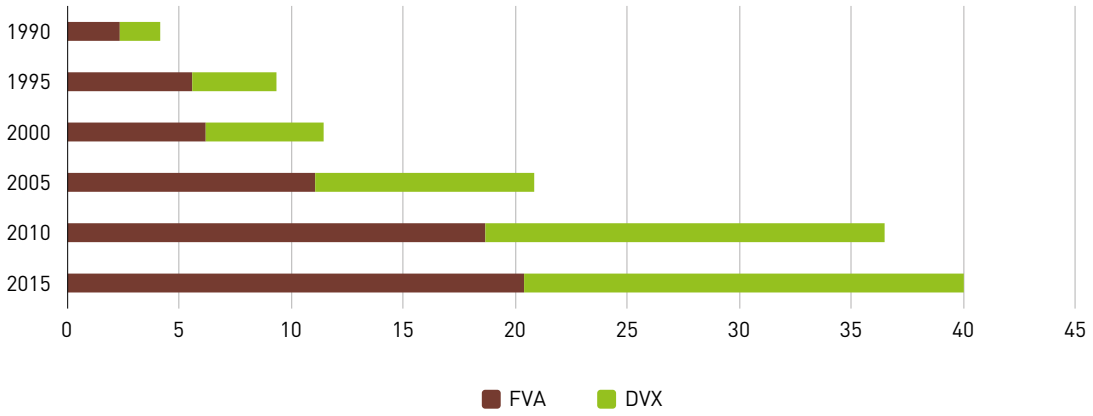
Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: Brunei Darussalam is removed due to an outlier issue.

The sum of FVA and DVX shows the extent to which an industry is involved in GVCs, or GVC participation. The GVC participation (FVA + DVX) of ASEAN agribusiness has been increasing over the last two decades in both value and the share in gross exports.

The GVC participation of agriculture and food products in 2015 amounted to $40 billion, or 39% of gross exports of agriculture and food products (Figure 14). In other words, more than one-third of ASEAN's agriculture and food products exports is related to either the forward or backward parts of GVCs to form the international agribusiness value chain. The value of FVA in ASEAN was higher than that of DVX until 2006, but the value of DVX exceeded the value of FVA from 2007 onward. This implies that the export competitiveness of ASEAN agriculture and food products has increased and that ASEAN products are used more in other countries as inputs for processed food and other industries (e.g. restaurants).

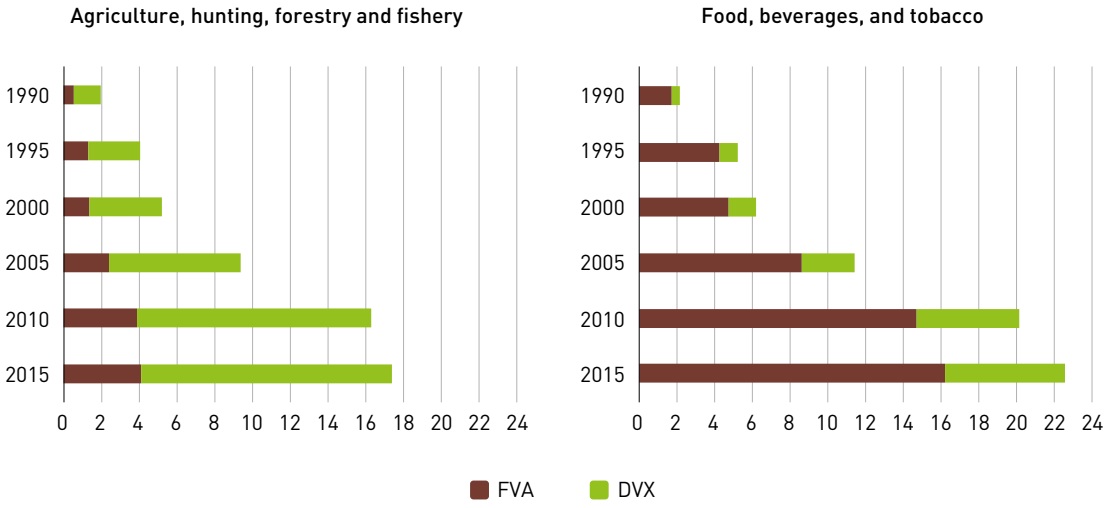
The structure of GVC participation in agriculture is significantly different from that of food products, as previously mentioned. Agriculture's GVC participation is very much determined by the share of DVX, which constituted 76% of GVC participation in 2015, underlining the fact that most agricultural products are exported as inputs to be further processed for food products. On the contrary, food products' GVC participation is led by FVA, which constituted 72% of GVC participation in 2015, showing that food exported from ASEAN is heavily dependent on foreign inputs imported from other countries (Figure 15).

Figure 14. **Evolution of GVC participation in ASEAN agribusiness, 1990–2015: value in gross exports of agriculture and food products** (Billions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

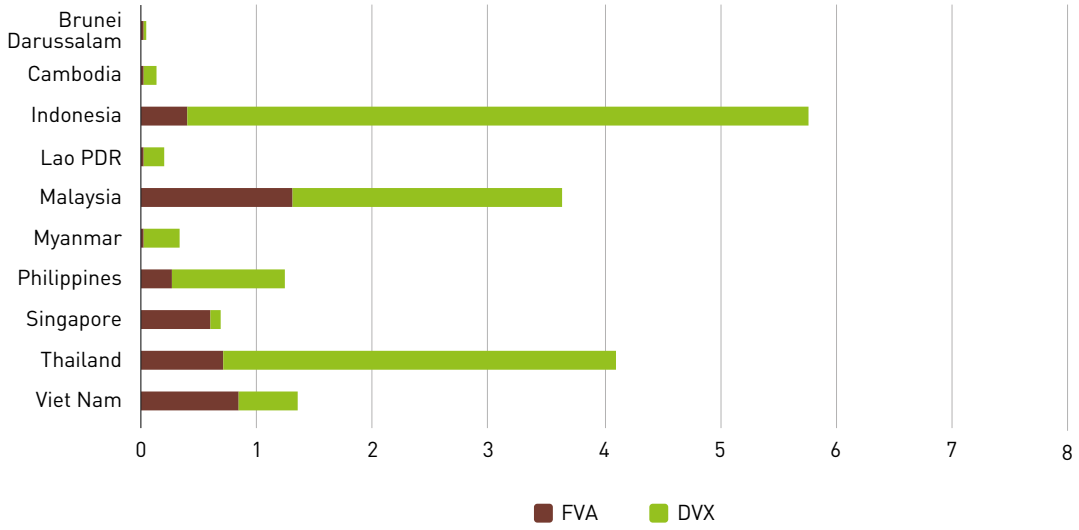
Figure 15. **Evolution of GVC participation in ASEAN agriculture and food products, 1990–2015** (Billions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Figure 16 shows the GVC participation in agriculture by country in 2015. It can be observed that GVC participation in agriculture by ASEAN Member States is mainly comprised of DVX, with the exception of Singapore and Viet Nam. The shares of DVX are especially significant in Indonesia, Thailand, and the Philippines, with the shares of DVX being 4–5 times larger those for FVA, meaning that these countries are heavily involved in the GVCs of agricultural products by the creation of forward linkages.

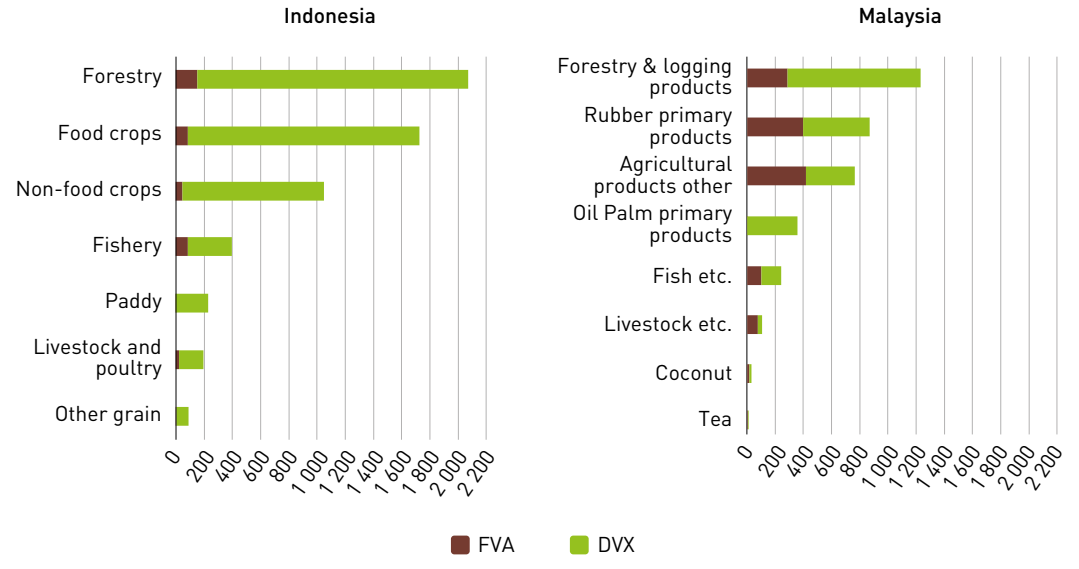
Figure 16. **GVC participation in agriculture in ASEAN, 2015: value in gross exports of agriculture, hunting, forestry and fishery** (Billions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: The involvement of Brunei Darussalam in agriculture GVC participation is negligible.

For example, Indonesia and Malaysia's agricultural exports are led by forestry and logging products (Figure 17). Indonesia's forestry products are exported to countries such as China, Germany, and the Republic of Korea, which are the top three countries for Indonesia's forestry exports in their

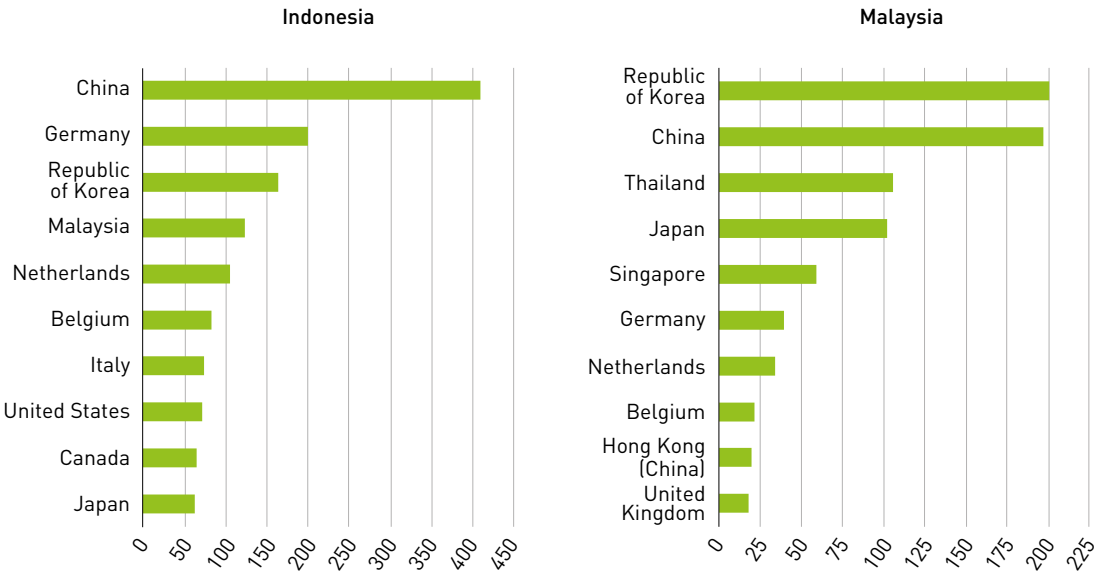
Figure 17. **GVC participation of agriculture, hunting, forestry, and fishery for Indonesia and Malaysia, 2015** (Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

own exports (DVX). Malaysia's forestry and logging products are exported to countries such as the Republic of Korea, China, Thailand, and Japan, and processed to be further exported to third countries. Figure 18 shows the top 10 users of Indonesia's and Malaysia's forestry exports in their respective exports.

Figure 18. **Top 10 users of Indonesia's and Malaysia's forestry exports (DVX) in their exports**
(Millions of dollars)

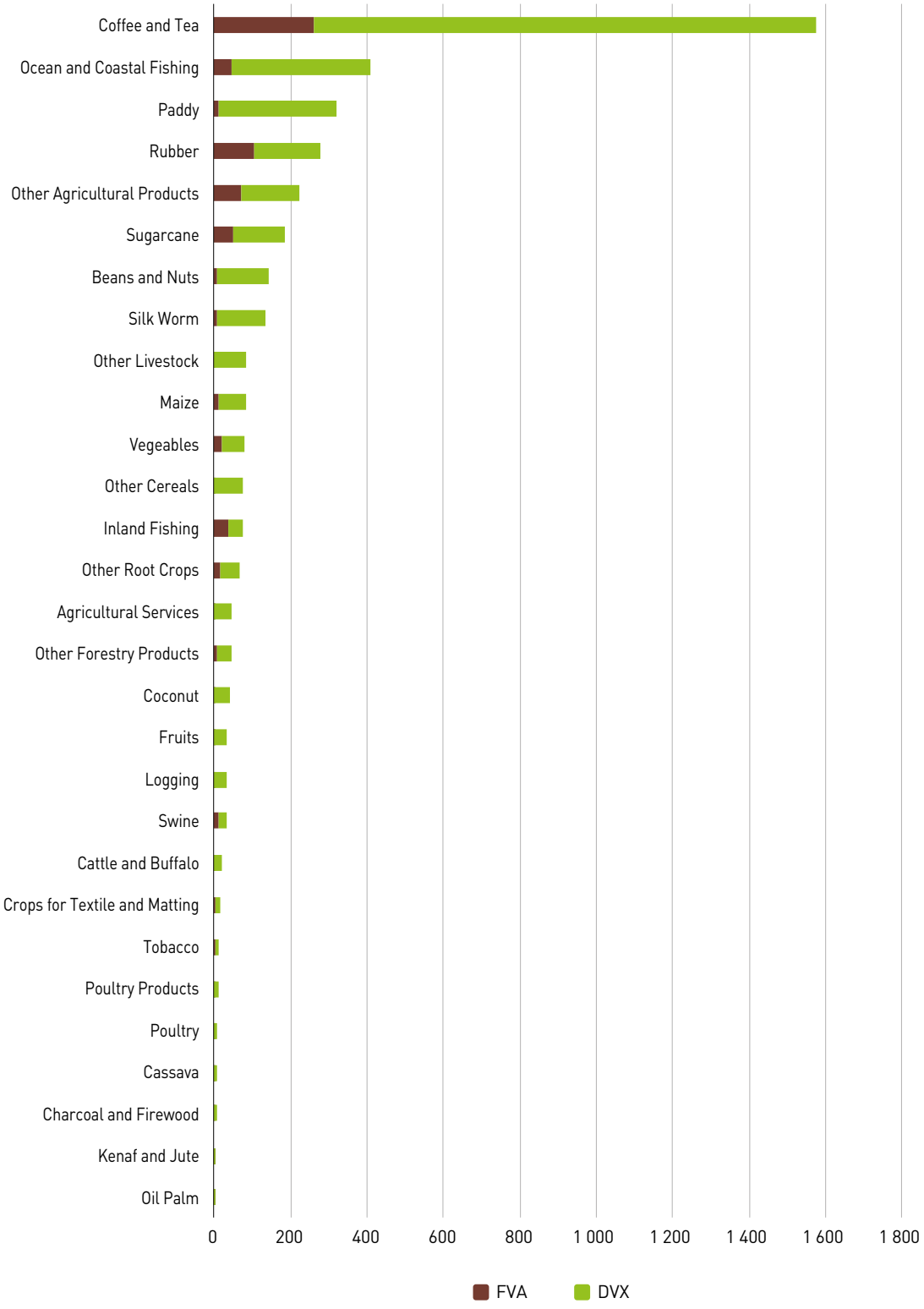


Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Thailand is another country with a high GVC participation rate for agriculture. While Indonesia's and Malaysia's agricultural exports are led by forestry and related products, Thailand's agricultural GVC is mainly comprised of coffee and tea, which accounted for almost 40% of the total amount of FVA and DVX of agricultural products in 2015. Thailand is also integrated into the value chain for seafood, rice, fruits, and vegetables (Figure 19).

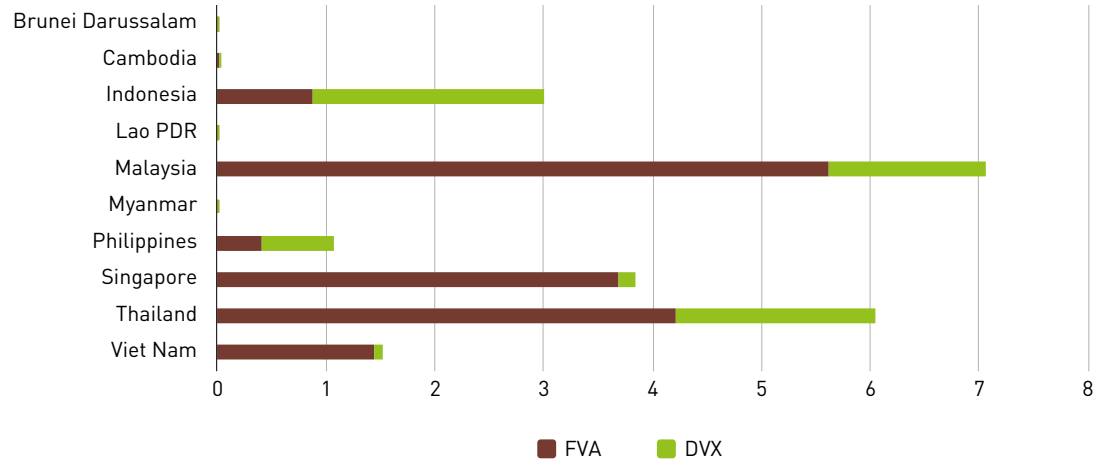
Unlike for agricultural products, the GVC for food products is mainly structured by foreign inputs (FVA). This is especially visible in Singapore, where domestic agricultural production is small due to its geographical limitation. Viet Nam, Malaysia, and Thailand also use large amounts of foreign inputs to produce food products, which implies that there is much room to develop the food processing industry using local agricultural inputs (Figure 20).

Figure 19. **GVC participation of agriculture in 2015** (Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

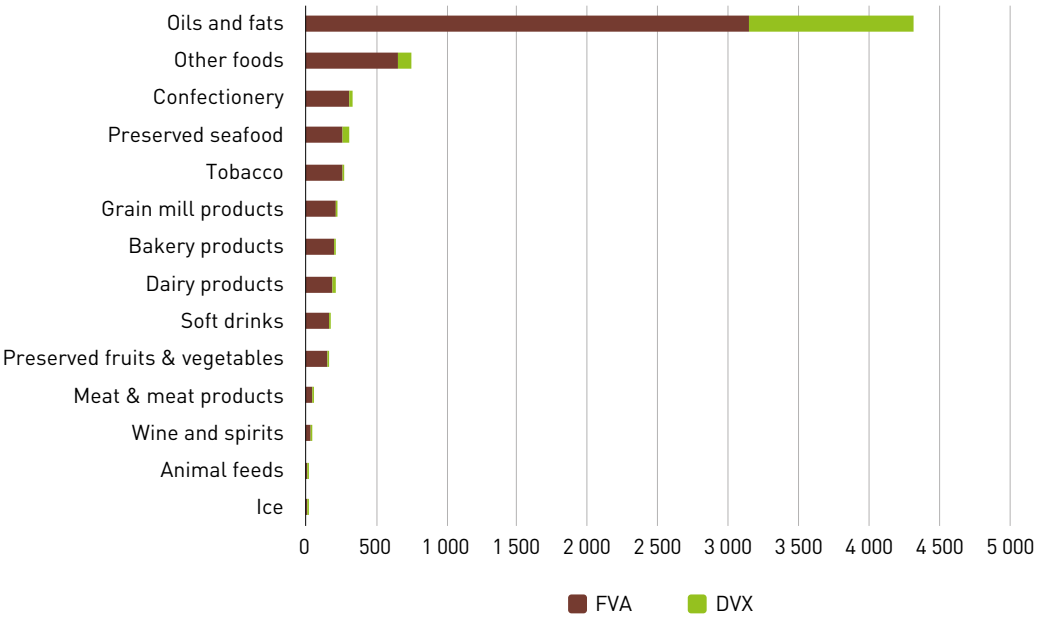
Figure 20. **GVC participation in food products in ASEAN, 2015: value in gross exports of food, beverages, and tobacco** (Billions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: The involvement of Brunei Darussalam, Cambodia, Lao PDR, and Myanmar in food GVC participation is negligible.

Figures 21 and 22 show Malaysia and Thailand's participation in food GVCs by product in 2015. In Malaysia, oil and fats are the key products that integrate the country into the food GVCs. Malaysia's oil and fats constitute almost 60% of the total of FVA and DVX for food products. It can be seen that other products, such as confectionery, preserved seafood, and tobacco, also use large amounts of FVA.

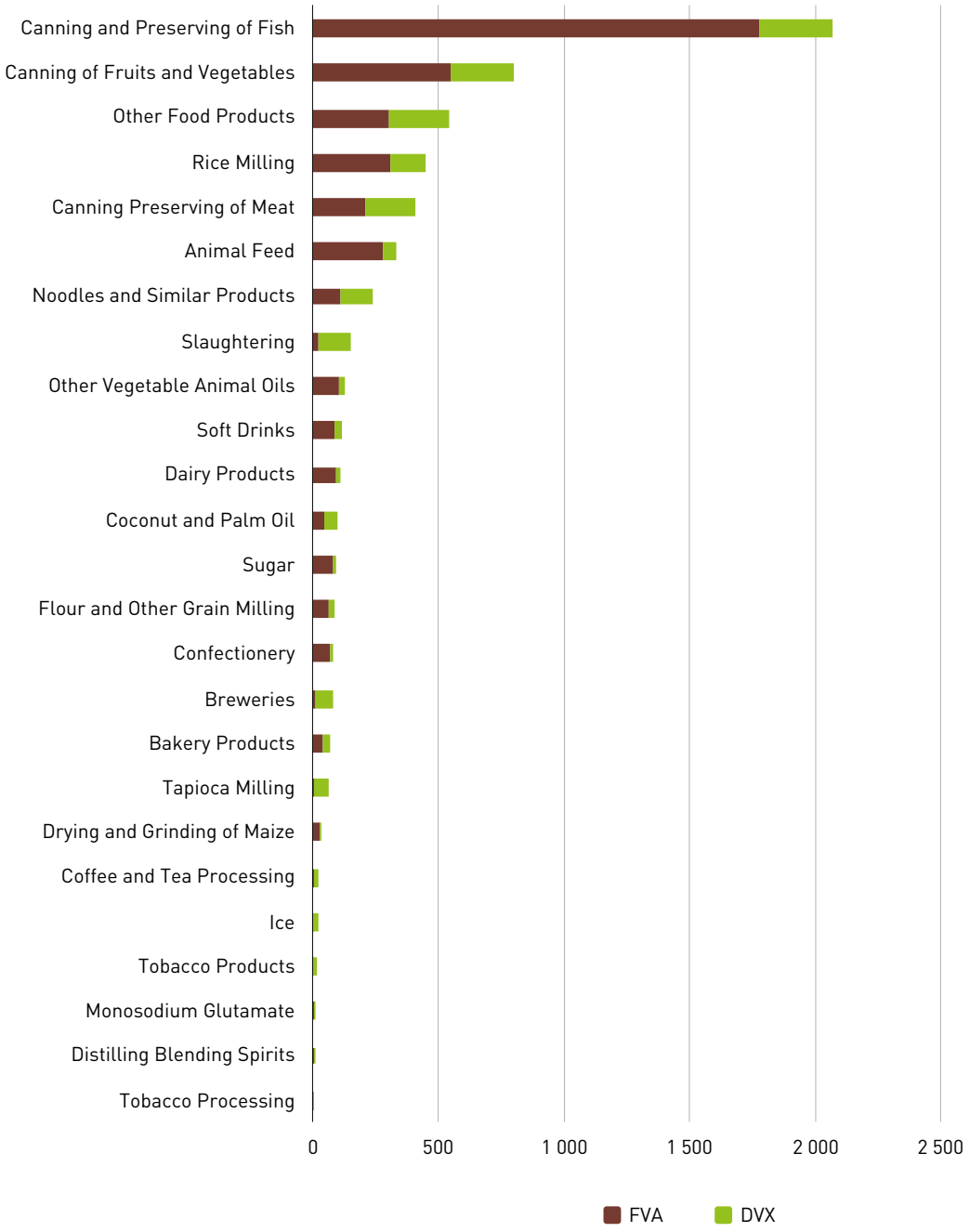
Figure 21. **GVC participation of food, beverage, and tobacco for Malaysia, 2015** (Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

As for Thailand, canned and preserved fish are the primary products that integrate the country into food GVCs, comprising around 30% of the total of FVA and DVX in food products in 2015. Other food products, such as canned fruits and vegetables, rice milling, and animal feed, also use large volumes of FVA.

Figure 22. **GVC participation of food, beverages, and tobacco for Thailand, 2015**
(Millions of dollars)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Regional value chains are also growing, but their growth has been less significant compared to GVCs.

Participation in regional value chains (RVCs) within ASEAN is also growing, from 4.6% in 1990 to 7.5% in 2015. However, it remains small compared to participation in GVCs, which marked 39% in 2015 (Table 6).

Table 6. **GVC and RVC participation in agribusiness and food product exports, 1990–2015** (Per cent of total exports)

	FVA: Foreign value added			DVX: Domestic value added incorporated in other countries' exports			Value chain participation	
Year	Total (A) = (B+C)	Created outside ASEAN (B)	Created within ASEAN (C)	Total (D) = (E+F)	Incorporated outside ASEAN (E)	Incorporated within ASEAN (F)	GVC participation (A + D)	RVC participation (C + F)
1990	18.1	15.8	2.3	14.4	12.1	2.3	32.5	4.6
1995	22.2	18.8	3.3	14.9	11.6	3.2	37.0	6.6
2000	20.6	17.1	3.4	17.7	14.3	3.4	38.3	6.8
2005	22.0	18.2	3.8	19.5	16.0	3.5	41.5	7.3
2010	21.7	17.6	4.1	20.9	17.2	3.7	42.6	7.8
2015	19.9	15.9	3.9	19.1	15.6	3.5	39.0	7.5

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

ASEAN multinational enterprises (MNEs) are contributing to developing the RVC in agribusiness by investing in the production of agriculture and food products (Tables 7 and 8). According to the ASEAN Secretariat, intra-ASEAN investment in agriculture, forestry, and fishing is showing an increasing trend, largely due to the increasing investment from Singapore, which comprises almost 90% of outward investment in agriculture within ASEAN (ASEANStat). The regional share in all FDI from ASEAN in this sector has been rising from 5% in 2012 to 14% in 2018 (Table 7). Large ASEAN MNEs, such as Wilmar International (Singapore), San Miguel Corporation (the Philippines), and Charoen Pokphand Food (Thailand), are actively investing in ASEAN countries and contributing in the technology spillovers in the invested countries.

Table 7. **Intra-ASEAN investment in agriculture, forestry, and fishing, by investing country, 2012–2018** (Millions of dollars)

Source Country	2012	2013	2014	2015	2016	2017	2018
Brunei Darussalam	0.03	0.14	0.23	0.92	0.66	0.14	0.03
Cambodia	0	0	0.01		0.05	0.02	0.17
Indonesia	0.89	1.05	17.32	0.15	0.05	-0.02	0.18
Lao PDR				0.02	0.03	0	0
Malaysia	202.78	145.26	160.54	313.59	272.59	25.35	88.11
Myanmar			0	0		0	0
Philippines	0.07	0.02	0.1	0.04	0.13	0.1	3.03
Singapore	928.96	1 303.32	3 750.21	3 618.97	2 326.22	3 634.75	3 187.36
Thailand	40.37	33.25	10.73	29.02	27.32	47.46	15.68
Viet Nam	120.01	116.18	162.26	163.53	125.54	117.16	111.1
ASEAN total	**1 293.11**	**1 599.22**	**4 101.39**	**4 126.25**	**2 752.58**	**3 824.96**	**3 405.65**
Total intra-ASEAN FDI in all industry	23 900.78	18 464.21	22 180.88	20 819.28	25 728.79	25 484.30	24 543.94
Share of FDI in Agriculture	5%	9%	18%	20%	11%	15%	14%

Source: ASEANStats (https://data.aseanstats.org/, accessed 6 November 2019).

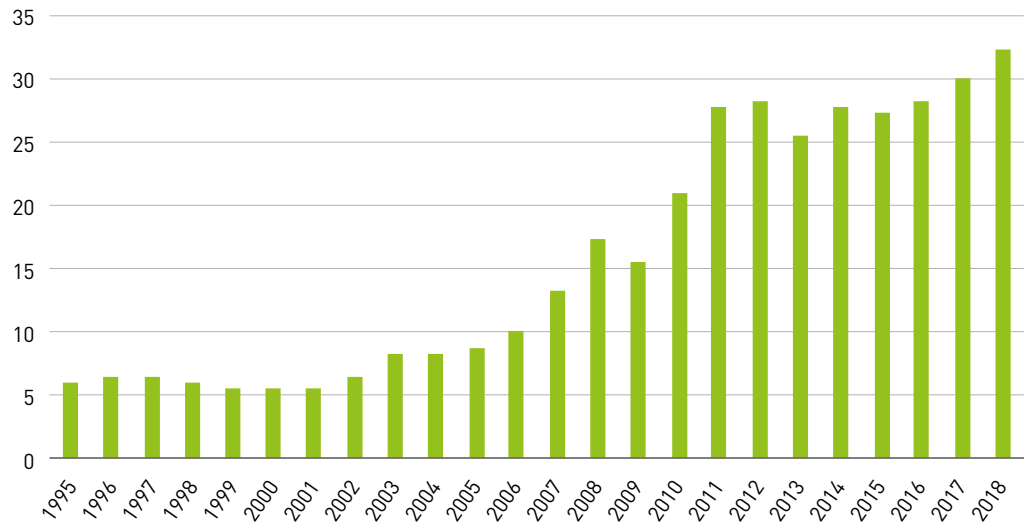
Table 8. **Major ASEAN MNEs in agribusiness with presence in ASEAN, 2010 and 2017**

Name	Headquarter	Industry	Cash and near-cash items (Millions of dollars)		Total assets (Millions of dollars)		Presence in ASEAN member states
			2010	2017	2010	2017	
Wilmar International	Singapore	Food products	1 080	2 148	34 091	40 933	Indonesia, Malaysia, Myanmar, Malaysia, Philippines, Thailand, Viet Nam
San Miguel	Philippines	Conglomerates	2 845	661	18 945	27 597	Indonesia, Malaysia, Singapore, Thailand, Viet Nam
Charoen Pokphand Food	Thailand	Food products	257	705	4 182	18 221	Cambodia, Lao PDR, Malaysia, Philippines, Viet Nam
Olam International	Singapore	Food and staple retailing	710	1 486	10 241	16 683	Indonesia, Lao PDR, Malaysia, Thailand, Viet Nam
CP ALL	Thailand	Food and staple retailing	521	887	1 589	11 062	Cambodia, Myanmar, Viet Nam
Berli Jucker	Thailand	Food and staple retailing	41	134	918	9 673	Cambodia, Lao PDR, Malaysia, Myanmar, Singapore, Viet Nam
Golden Agri-Resources	Singapore	Food products	218	126	10 114	8 138	Indonesia, Malaysia
Thai Beverage	Thailand	Beverages	112	298	2 563	5 833	Malaysia, Myanmar, Singapore, Viet Nam
PPB Group	Malaysia	Food Products	300	271	4 526	5 636	Indonesia, Singapore, Thailand, Viet Nam
MMC Corporation	Malaysia	Conglomerates	1 319	172	11 844	5 629	Indonesia, Thailand
Felda Global Ventures Holdings	Malaysia	Food products	..	417	..	5 062	Cambodia, Indonesia, Myanmar, Singapore
Kuala Lumpur Kepong	Malaysia	Food products	407	346	2 971	4 619	Singapore, Indonesia
Thai Union Group	Thailand	Food products	34	25	2 480	4 491	Viet Nam

Source: Adapted from ASEAN Secretariat and UNCTAD (2018).

The rise of the RVC is also proven by the increasing volume and share of intra-trade in the agriculture and food sector's exports in the last two decades (Figure 23). Given the nature (i.e. perishable) and the food culture of this sector, regional concentration is an expected evolution. In particular, ASEAN food transnational corporations (TNCs) as mentioned above are all regional TNCs, rather than global TNCs, with a strong presence in ASEAN.

Figure 23. **Value of intra-trade in the agriculture and food sector's exports in ASEAN, 1995–2018** (Billions of dollars)



Source: UNCTAD Stat.

Box 3. **Case study of ASEAN MNCs: Thailand's Charoen Pokphand Food (CPF), PCL. in Viet Nam**

Charoen Pokphand Foods Public Company Limited (CPF) is one of the world's leading listed agro-industrial and food conglomerates in Thailand and operates in 17 countries, including Cambodia, Lao PDR, Malaysia, the Philippines, and Viet Nam. CPF operates vertically integrated businesses, which incorporate the manufacturing of animal feed, animal breeding and animal farming; meat processing and the manufacturing of semi-cooked meat and fully-cooked meat; and food products and ready meal products, as well as the meat and food retailer and restaurant businesses.

The CPF group was one of the first foreign enterprises to invest in Viet Nam, and it has been operating in Viet Nam since 1988 via the CP Vietnam Corporation. Today, the group's business covers the entire agribusiness value chain, from the manufacture and sale of animal feed products, breeding, farming and the sale of livestock and aquatic animals, as well as the manufacturing and the sales of value-added, processed food products.

.../

Box 3. **Case study of ASEAN MNCs: Thailand's Charoen Pokphand Food (CPF), PCL. in Viet Nam** (Concluded)

The CP Vietnam Corporation has developed a model of vertically integrated farming (feed-farm-food) in Viet Nam with high technology adoption. The company operates nine feed mills in Viet Nam to produce yearly 3.8 million tons of livestock and aquaculture feed products for its own farms and to supply local farmers. The CP Vietnam Corporation is also engaged in food processing, and operates a number of meat and seafood processing plants in Ha Noi, Hue, Dong Nai, and Ben Tre provinces. Processed livestock products are primarily for the domestic market, whereas processed aqua products are primarily for export. As the Vietnamese Government has targeted to increase its seafood exports, especially of shrimp, the CPF Group forecasts that Vietnamese shrimp exports will increase from 690,000 tons in 2017 to more than 1 million tons by 2025. To capture this opportunity, CPF considers Viet Nam as one of the potential countries for their growing business interests.

Food products are produced in hygienic and traceable conditions in accordance with international quality management standards, such as the Good Manufacturing Practices, Hazard Analysis and Critical Control Points, and the International Organization for Standardization. In order to support their food processing plants, the company uses the material from its own farm as well as from contracted farms. The company supports local farmers by transferring skills and know-how on farming, as well as knowledge of food safety and quality. Through contract farming, the company cooperates with more than 3,000 local farms and employs about 400,000 employees in Viet Nam.

Source: CPF website (https://www.cpfworldwide.com/en/about; http://www.cpp.hk/?route=business_vietnam).

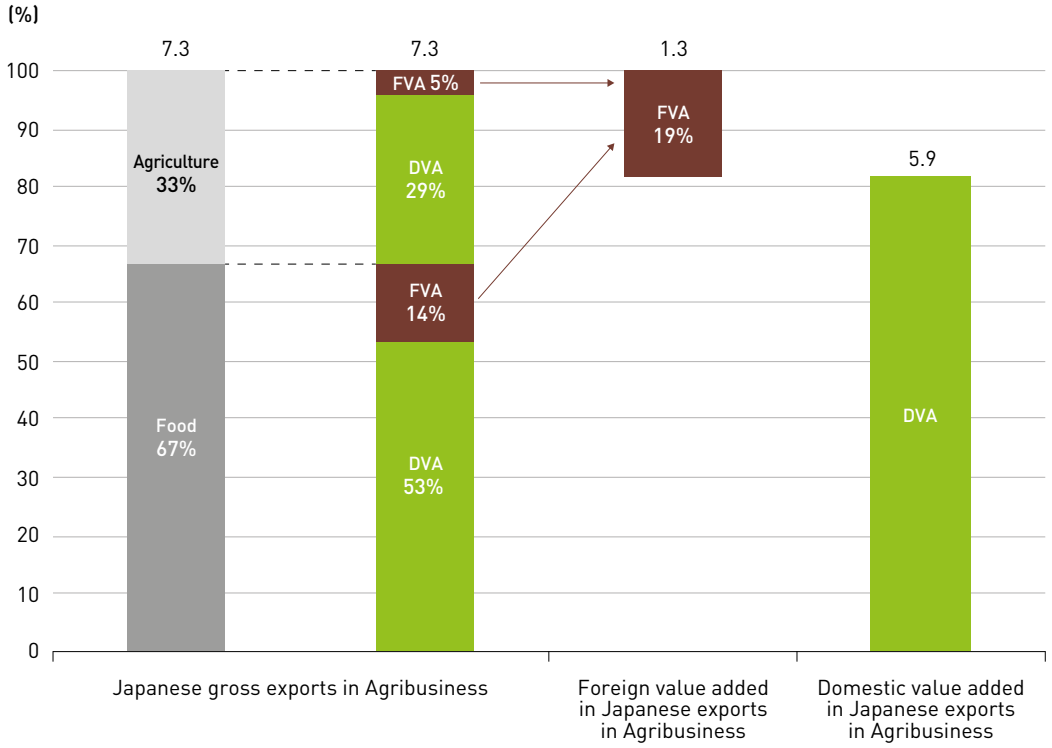
Japan has been a strong supporter of agribusiness in ASEAN. There is a joint effort by the Government of Japan and the private sector to develop agribusiness in ASEAN and integrate it into GVCs.

ASEAN and Japan are important partners for the development of the agribusiness sector. In 2015, Japan's value-added trade exports for agribusiness reached $7.3 billion. The structure of its value added showed that 19% of Japan's gross exports use foreign valued-added exports (Figure 24). Imports from ASEAN that were used in Japan's agriculture exports amounted to US$137 million, or 10% of total foreign value added in 2015 (Table 9).

Japan plays a significant role in ASEAN's agriculture and food exports. Japan contributed $361 million for agriculture and $1,436 million for food products, or 9% of ASEAN's FVA of agricultural and food product value-added exports in 2015. At the same time, ASEAN is also an important partner for Japan's agribusiness. In 2015, ASEAN contributed $42 million in inputs (2%) in Japan's agriculture exports, and $95 million (2%) in Japan's food products exports. The largest ASEAN contributor to Japanese agribusiness exports was Indonesia, followed by Thailand and Malaysia (Table 9).

GVCs relate one industry in a country not only with other in-country industries but also with industries in other countries. Therefore, any increase or decrease in demand for the agribusiness sector affects industries in other countries. In 2015, Japanese gross exports in agriculture and food products amounted to $2.4 billion and $4.8 billion, respectively. Japan used $42 million and $95 million in inputs from ASEAN, respectively, in these exports in 2015. If ASEAN's contribution to Japanese agriculture and food industry exports remains the same, a $1 million increase in the exports of agriculture products and food products from Japan would inputs and materials from ASEAN worth $17,000 and $20,000, respectively.

Figure 24. **Structure of Japanese value-added exports in Agribusiness, 2015**
(Billions of dollars and per cent)



Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Table 9. **Value-added exports of Japan's agribusiness sector, 1990–2015** (Millions of dollars)

	1990	1995	2000	2005	2010	2015
			Agriculture, hunting, forestry and fishing (A)			
Gross exports	727	1 132	1 873	1 787	2 445	2 427
Domestic value added	680	1 070	1 749	1 591	2 177	2 094
Foreign value added	47	62	123	196	268	333
Of which, ASEAN	5	7	14	22	33	42
Brunei Darussalam	0	0	0	1	1	1
Cambodia	0	0	0	0	0	0
Indonesia	2	3	6	9	16	20
Lao PDR	0	0	0	0	0	0
Malaysia	1	1	2	4	5	6
Myanmar	0	0	0	0	0	0
Philippines	0	0	1	1	2	3
Singapore	0	0	1	1	2	2
Thailand	1	1	2	4	5	7
Viet Nam	0	0	2	2	1	2
			Food, beverages and tobacco (B)			
Gross exports	1 356	1 870	2 306	2 962	4 589	4 827
Domestic value added	1 205	1 693	2 053	2 473	3 833	3 847
Foreign value added	151	176	253	489	756	981
Of which, ASEAN	11	14	22	43	70	95
Brunei Darussalam	0	0	0	1	1	2
Cambodia	0	0	0	0	0	0
Indonesia	4	5	7	13	26	36
Lao PDR	0	0	0	0	0	0
Malaysia	1	1	3	6	9	12
Myanmar	1	0	1	1	1	2
Philippines	1	1	2	5	8	11
Singapore	1	1	1	2	4	5
Thailand	3	4	6	12	17	24
Viet Nam	1	1	2	3	3	4
			Agribusiness (A+B)			
Gross exports	2 083	3 002	4 179	4 749	7 034	7 254
Domestic value added	1 885	2 764	3 802	4 064	6 010	5 941
Foreign value added	198	238	377	685	1 025	1 314
Of which, ASEAN	15	21	35	65	103	137
Brunei Darussalam	0	0	1	1	2	3
Cambodia	0	0	0	0	0	0
Indonesia	6	8	12	23	42	56
Lao PDR	0	0	0	0	0	0
Malaysia	2	2	5	10	15	18
Myanmar	1	1	1	1	1	2
Philippines	1	2	3	6	10	14
Singapore	1	1	2	3	6	7
Thailand	3	6	8	16	23	31
Viet Nam	2	2	4	5	4	6

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

There has been strong inter-governmental cooperation between Japan and ASEAN countries to enhance the agribusiness sector. One of the key initiatives includes the Global Food Value Chain Strategy, launched by the Ministry of Agriculture, Forestry and Fisheries of Japan in June 2014. The strategy aims to promote the economic growth of developing countries through enhanced economic cooperation and investment by the Japanese food industry, as well as to promote the export of Japanese food and food-related infrastructure, and to assist Japanese food companies operating overseas. It is implemented through close cooperation among academia and the public and private sectors in Japan[7].

Seven regions, including ASEAN, are identified as high potential regions for Japanese investment. There are six bilateral dialogue mechanisms in place for Cambodia, Indonesia, the Philippines, Myanmar, Thailand, and Viet Nam under the Global Food Value Chain Strategy[8]. Key activities conducted bilaterally include the following.

Cambodia

- Addressing the challenges faced by Japanese companies when investing and operating in Cambodia, through the contact points in the Ministry of Agriculture in Cambodia and food value chain related programmes implemented by the public and private sectors.
- Four meetings held for the "Cambodia-Japan Food Value Chain Bilateral Dialogue" from 2015 to 2018.

Indonesia

- Discussing a framework for long- and medium-term cooperation among the public and private sectors.
- Exchanging views on policies, government efforts, and current business activities.
- Two meetings held for the "Bilateral Forum on Agriculture Cooperation Japan-Indonesia" from 2015 to 2016.

Philippines

- Aiming to raise food self-reliance and the development of food value chains through the growth of the agricultural and food industries by public and private cooperation.
- Three meetings held for the "Japan-Philippines Agricultural Cooperation Dialogue" from 2016 to 2018.

Myanmar

- Discussing the progress and issues in implementing the Food Value Chain Road Map in Myanmar (2016-2020) (Box 4).
- Five meetings held for the "Japan-Myanmar Cooperation Dialogue for the Development of Myanmar's Agriculture, Forestry, Fisheries and Foods" from 2014 to 2019.

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7 The basic pillars of the strategy include the following:
Cooperation among academia and the public and private sectors;
Create fora, such as bilateral dialogues with partner countries and public-private councils;
Take advantage of economic cooperation;
Develop food-related infrastructure, such as cold chains;
Create favourable business and investment environments for the Japanese food industry;
Strengthen the information-gathering system;
Develop human resources both inside and outside Japan;
Develop research and technology; and
Facilitate financing for overseas business.

8 Information on the bilateral meetings is based on the Ministry of Agriculture, Forestry and Fisheries of Japan website, accessed on 12 December 2019.

Thailand

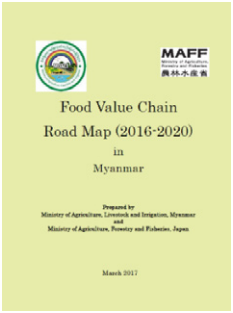
- Exchanging views on policies for promoting private investment in the sectors of agriculture, forestry, fisheries, and the food industry.
- Two meetings held for the "Japan Thailand Agricultural Cooperation Dialogue" from 2016 to 2019.

Viet Nam

- Implementing the five-year (2015–2019) Action Plan on selected model areas under the "Medium- to Long-Term Vision for Japan-Viet Nam Agricultural Cooperation" (Box 5).
- Four meetings held for the "Japan-Viet Nam Agricultural Cooperation Dialogue" from 2014 to 2018.

Box 4. **Myanmar: Food Value Chain Road Map (2016–2020)**

The Ministry of Agriculture, Forestry and Fisheries of Japan and the Ministry of Agriculture, Livestock and Irrigation of Myanmar jointly prepared the "Food Value Chain Road Map (2016-2020)", which contains the prioritized measures for five products (rice and pulses; oil crops, industrial crops, and other upland crops; horticulture; livestock; and fisheries). It also contains measures to be taken for horizontal issues, including agricultural finances; agricultural machineries; agricultural inputs; the promotion of the conservation and utilization of plant genetic resources and the seed industry; the food industry; the formation of farmers' organizations; and research and extension.



The Road Map is used as the basis for measures actively taken by the Government of Myanmar, collaborative assistance provided by the Japanese Government and other development partners, and investment by the private sector, which will contribute to the comprehensive development of agriculture and fisheries in Myanmar if they are implemented appropriately.

Source: Ministry of Agriculture, Forestry and Fisheries of Japan (http://www.maff.go.jp/e/policies/inter_relate/gfvc/attach/pdf/180606-17.pdf, accessed 14 August 2018).

Box 5. **Viet Nam: Medium- to Long-Term Vision for Japan-Viet Nam Agricultural Cooperation**

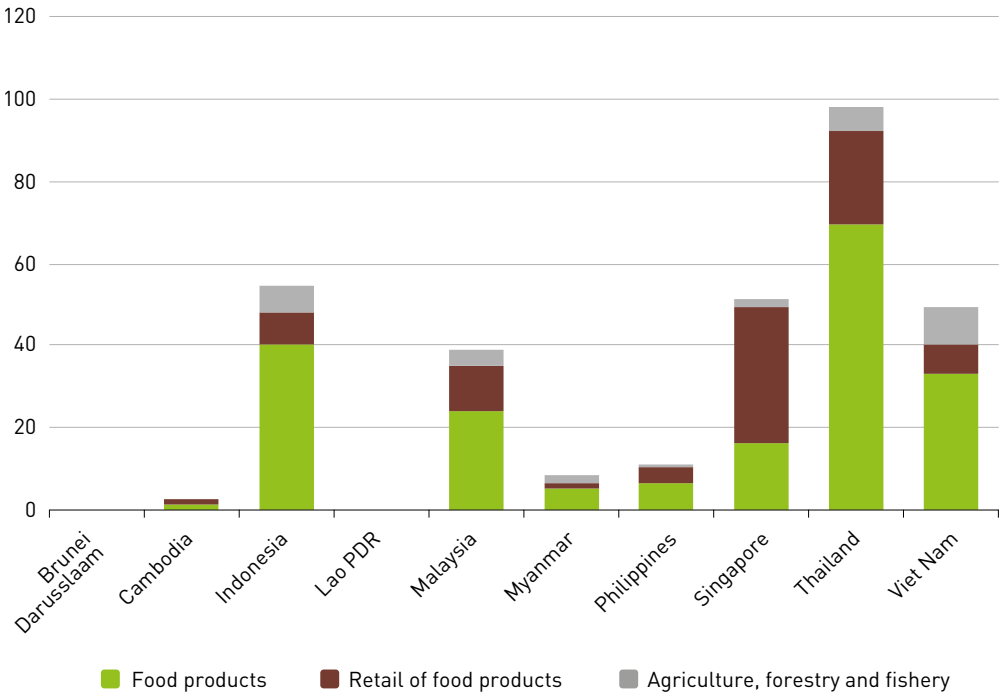
The formulation of the Medium-to Long Term Vision for establishing the food value chain in Viet Nam was confirmed during the first high-level meeting on the Japan-Viet Nam Agricultural Cooperation Dialogue held in June 2014. The Vision was approved at the subsequent high-level meeting in August 2015, where public-private partnerships for the steady implementation of activities was confirmed. Based on the Vision, a five-year action plan to be implemented in the model regions across Viet Nam was designed in 2015. The five-year action plan, which covers 2015–2019, contributes to the improvement of productivity and the value addition of agricultural products, the enhancement of food-processing and product development, the improvement of the distribution system and the cold chain, and addressing cross-cutting issues, such as climate change mitigation and human resource development.

Source: Ministry of Agriculture, Forestry and Fisheries of Japan (http://www.maff.go.jp/e/policies/inter_relate/gfvc/attach/pdf/180606-17.pdf, accessed 14 August 2018).

Furthermore, Japan established the ASEAN Food Industries Human Resource Development Association in 2014 following the agreement to "promote cooperation on food value chain from farmers to consumers by collaborating between public and private sector", included in the Implementation Plan of the Vision Statement on ASEAN-Japan Friendship and Cooperation adopted in Tokyo in 2013. The association provides students of ASEAN universities with opportunities for advanced learning about the food industry, information on employment with existing and future local affiliates of Japanese companies, and experience of Japanese food culture. In cooperating with key universities in ASEAN, the association has trained more than 1,000 students about agribusiness, including the food processing, logistics, finance, marketing and environmental aspects of agribusiness[9].

In addition to the initiative by the Government, Japanese companies are also taking an active role in promoting agribusiness in Japan. There are approximately 312 Japanese companies operating in ASEAN in agribusiness in 2019 (including the production of agricultural and food products and food product retail) (Toyo Keizai Shimpo Sha, 2019), helping build the GVCs along the Japanese companies' supply chains (Figure 25).

Figure 25. **Number of Japanese subsidiaries in ASEAN in agribusiness, 2019**



Source: AJC, based on Toyo Keizai Shimpo Sha (2019).

[9] ASEAN Food Industries Human Resource Development Association website (http://afh-jp.com/en/, accessed 12 December 2019).

The following section introduces three case studies of Japanese companies in ASEAN.

Case Study 1: Japanese investment in ASEAN: Producing high-quality bananas through FDI and contract farming in the Philippines (Dole Food Company Inc. and ITOCHU Corporation)[10]

Japan imported 985,000 tons of bananas in 2017, of which 80% were from the Philippines. Dole Food Company Inc., which is the largest fruit and vegetable company in the world, accounts for around 30% of the Japanese market for bananas. In April 2013, ITOCHU Corporation acquired the fruit and vegetable business in Asia and the global processed foods business owned by Dole.

Bananas produced in Dole's own farms and farms which produce bananas for Dole by contract (contract farming) are managed strictly by its food safety and quality requirements, using up-to-date technology. In order to produce high-quality bananas, Dole takes pups (growth points) from outstanding banana canes selected from several fields and grows them in the clean environment of its dedicated facility. Furthermore, in order to prevent environmental risks, such as non-point source pollution into waterways, Dole manages and inspects the use of chemicals and has obtained ISO 14001 environmental certification for all farms managed by the headquarters, and the company and has the farms checked periodically by third parties.

Bags for preventing diseases, harmful insects, and damage from birds, and for heat retention. Source: ITOCHU Corporation website.

Case Study 2: Japanese investment in ASEAN: Growing high value-added barley with technology transfer in Myanmar (Nishida Barley Processing Co. Ltd.)[11]

Nishida Barley Processing Co. Ltd., located in Kumamoto, Japan, is a Japanese company that specializes in the production and processing of grains, such as wheat, rice, and corn. Nishida Barley Processing Co. Ltd. has been growing barley (*hatomugi*) in Myanmar since 2017, helping to support sustainable growth and achieving the Sustainable Development Goals in Myanmar.

The company has 90 years of history in processing grains in Japan, adopting advanced technology and know-how to produce high value-added products, such as organic cereals and animal feeds. The company was first interested in Myanmar in 2016, when it found that there was a movement to start the cultivation of barley in Shan State in Myanmar. Shan State was known for opium poppy production and the Myanmar Government had been trying to cultivate alternative, non-narcotic crops to shift from opium poppy production. However, due to a lack of technical inputs and know-how, it was challenging for local farmers in Shan State to produce crops that could compete with the neighbouring countries such as China and Lao PDR.

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[10] ITOCHU Corporation website (https://www.itochu.co.jp/en/csr/supply_chain/reportage/index.html, accessed 12 December 2019).

[11] Nishida Barley Processing Co. Ltd. website (http://www.westa.co.jp/) and Nishi-Nihon Newspaper, 24 October 2018 (https://www.nishinippon.co.jp/nnp/kumamoto/article/459821/)(accessed 12 December 2019).

In order to address these challenges, Nishida Barley Processing Co. Ltd. started considering investing in Myanmar and transferring processing technology and know-how to produce high value-added barley products. As a first step, the company imported 100 tons of barley from Shan State and checked the characteristics of the locally grown barley to confirm that it could increase in competitiveness with the support of the company. In 2018, Nishida Barley Processing Co. Ltd. received funding from the Japan International Cooperation Agency to start the technology transfer project in Myanmar. Under the project, the company brought processing equipment for milling and packaging and trained local stakeholders on how to use the equipment. The company also provides training to the local farmers on how to cultivate high-quality barley as well as how to process the harvested barley.

In 2019, the company aimed to grow barley in 200 hectares of farmland together with the local farmers whom they work with under contract farming. The company aimed to process the harvested barley using the equipment installed with support from the Japan International Cooperation Agency. The high value-added barley will be exported to Japan for further processing and consumption.

Photos from Nishida Barley Processing Co. Ltd. website (http://www.westa.co.jp/).

Case Study 3: Japanese investment in ASEAN: Responsible production of palm oil in Malaysia (Fuji Oil)[12]

Fuji Oil Holdings Inc. (hereafter referred to as Fuji Oil) is a Japanese company that engages in the development, production, and sales of oils and fats, confectionery and bakery ingredients, and soy. Japan consumes approximately 5 billion tons of palm oil per year for food products, and the Fuji Oil Group supplies 50% of it.

Fuji Oil formulated and announced its **Responsible Palm Oil Sourcing Policy** in March 2016, in which it commits to no deforestation, no peatland, and a no-exploitation policy for all palm oil within their supply chains. The company joined the Roundtable on Sustainable Palm Oil (RSPO) in 2004, ahead of many Japanese companies sourcing palm oils from countries, including Indonesia and Malaysia, and actively promoting the responsible palm oil farming. In July 2016, Fuji Oil concluded a membership agreement with The Forest Trust, a non-profit organization supporting sustainability in the field of raw materials, in order to promote procurement in line with the Responsible Palm

[12] Fuji Oil Holding Inc. website (URL: https://www.fujioilholdings.com/en/) and Nikkei ESG and Nikkei.com (accessed 12 December 2019).

Oil Sourcing Policy. Following the policy, Fuji Oil is currently working to achieve full traceability for all palm oil purchased and processed across the Fuji Oil Group. According to a progress report published in June 2018, the company achieved a global palm oil traceability score of 95% in the period from July–December 2017. This refers to a global average of 96% for all palm oil and 94% palm kernel oil products.

Fuji Oil is also working to ensure the social and human rights of all workers engaged in their supply chain. For example, Fuji Oil reviewed the challenges faced by intermediaries and farms and identified some problems, such as one farm in Malaysia that collected the passports of foreign workers. Another farm exchanged employment contracts with foreign workers without sufficient explanation, and some contracts were written in language which the foreign workers would not understand. To address these problems, Fuji Oil conducted transformation activities with these companies and achieved improvements, such as developing no-exploitation policies for these companies, establishing new grievance procedures for employees, returning passports to foreign workers, and making sure that all foreign and local workers received a copy of their signed employment contracts. Fuji Oil also started the support programme for smallholder farmers in Kinabatangan of Saba, Malaysia, together with Wild Asia, a non-governmental organization, and their suppliers from January 2016, to build their capacities to conduct sustainable farm management and receive certification from the RSPO. In May 2017, 55 farmers supported by Fuji Oil attained RSPO certification. Fuji Oil is establishing a new palm oil manufacturing company in Malaysia, jointly with a local company. It is going to be one of the biggest factories in the world that produces high-quality palm oil products and has environmental and social certification.

Deepening integration in agribusiness GVCs could have both positive and negative impacts on a country's agribusiness industry. On one hand, integration into GVCs could contribute to the expansion of agricultural and food production, driven by increased foreign inputs and technology transfer.

Being part of agribusiness GVCs could bring positive impacts to ASEAN, including the expansion of agricultural production with enhanced productivity, improved food safety and quality, and better access to food and nutrition. It could also bring positive social impacts, such as job creation and increased income.

Expansion of agricultural production with enhanced productivity: Greater productivity in agribusiness can be achieved by 1) the increased use of foreign inputs, which tend to be more competitive than domestic inputs, and 2) the transfer of technology and know-how from foreign firms. GVC participation facilitates the greater use of foreign inputs, such as seeds, fertilizers, and agricultural machinery. Such foreign inputs could help enhance the productive capacities of local farmers and food manufacturing companies, leading to the increased competitiveness of the agriculture and food industries in ASEAN. As there is limited space for ASEAN to expand arable land to increase agricultural output, it is essential for ASEAN countries to increase productivity and intensify agricultural production by using more sophisticated and competitively priced inputs. FDI from leading firms in the GVCs plays an important role in the dissemination of such inputs as well as agricultural technology and know-how to local agriculture and food producers, which contribute to increasing the productivity and quality of agricultural production (see example of Nishida Barley Processing Co. Ltd).

While there are some merits of FDI in agriculture, there is also some sensitivity, especially regarding the issues related to land ownership or the use of land by foreign companies. However, rural farmers could still benefit from being integrated into GVCs by participating in contract farming, which does not require the transition of land ownership or leasing. By being part of contract farming, local

suppliers could enjoy opportunities to receive foreign inputs, credit, technology, and management advice from foreign companies. According to some studies, the positive effects on food security as well as household and farm income can be observed once farmers are included in contract schemes and high-value export chains (FAO, 2015b: 4).

Improved food safety and quality and sustainable production: Agribusiness GVCs are often led by large multinational companies. FDI from these companies may have positive impacts on local agricultural and food production practices as many lead companies bring their own or international standards for food quality, safety, and health to both the products and processes that occur in their supply chains. These efforts are often done in cooperation with non-governmental organizations and governments (for example, the Global Food Safety Initiative) (FAO, 2015a: 30).[13]

Conservation of the environment is also a key priority for leading multinational companies in GVCs. They often obtain international standards, such as the ISO 14001 Environmental Management System, for their farms and contract farms in order to ensure the environmental sustainability in their supply chains (see the case of bananas). Being part of GVCs may provide opportunities for local farmers and food companies to upgrade their food safety and quality. It may also help them to get international certification for environmental sustainability with the support from lead companies, contributing to enhance the competitiveness of local food producers and gain trust from consumers.

Better access to food and nutrition: Increased trade could contribute to greater availability and more variety of food, which is important for improving nutrition (FAO, 2015a: 30). Greater participation in GVCs has the potential to increase access to more affordable, nourishing foods through the enhanced trade of foreign food products.

On the other hand, without appropriate policy measures, it may accelerate environmental degradation and shift production from staple foods to cash crops, raising food security concerns. Smallholder farmers and SMEs may also be left out from GVCs.

There are also some risks associated with the greater integration to GVCs;

Shift to the production of cash crops: There is a widely shared concern that the expansion of trade and investment in agriculture may shift the production patterns at the local level in a way that favours cash crops or products primarily destined for foreign markets (FAO, 2015a: 30). For example, in the ASEAN Integrated Food Security (AIFS) Framework and Strategic Plan of Action on Food Security in the ASEAN Region (SPA-FS) 2015-2020, ASEAN leaders mentioned the shift of arable land to the production of biofuels as an "emerging threat", with potential repercussions on food production. Too much specialization on certain crops for export may also make a country more vulnerable to volatility in commodity prices and buyers' demand.

While there are mixed views, there is also a series of studies that suggests that increases in trade and investment allow for the expansion of production of cash crops without leading to a decline in traditional food crops[14]. There is also a view that cash crop production can enable farmers and farm workers to increase their income, thus contributing to improving their living standards and better access to food, which is the core element of food security.

[13] See also Hoekman and Mavroidis (2015).

[14] For example, when Madagascar started to export fruits and vegetables to Europe under contract farming, rice productivity increased by 70% through technology spillovers (FAO, 2015a: 29).

Challenges for smallholder farmers: The International Finance Corporation (IFC) estimates that there are around 525 million smallholder farms worldwide, 388 million of which are located in Asia, including ASEAN countries (IFC, 2013). Although smallholder farmers constitute a large part of agricultural production, their involvement in GVCs is still limited due to a lack of capacities. For example, productivity and crop quality are often low due to a lack of technology and finance to get the necessary inputs, such as seed, fertilizer, and agricultural machinery. Poor farm management skills, small production volumes, and limited food safety and quality controls have also become obstacles for them to be selected as suppliers of international lead companies.

As discussed previously, lead companies in GVCs often introduce their food safety and quality requirements to their suppliers. While these requirements improve the quality of food available in markets, they often become a burden on smallholders. A study done for the FAO found that increasing standards in international markets may exclude smallholders and family farmers from participating in GVCs, since they might be unable to comply with the stringent requirements from the lead firms due to a lack of technical and financial capacities (Montalbano, Nenci, and Salvatici, 2015: 5). It is, thus, important for ASEAN Governments to take policy measures to support smallholders to gain capacities and be part of the supply chain of lead companies of GVCs, including through providing technical support to comply with private voluntary standards or promoting domestic lead firms to include smallholders in contract farming.

Environmental degradation: International demand for certain agricultural products, such as palm oil, has heavily impacted environmental degradation in countries such as Indonesia and Malaysia, where 90% of the world's palm oil is produced. According to a recent study conducted for the European Union (Barthel et al., 2018), the total area for oil palm plantations in Indonesia and Malaysia has increased from 2.6 million hectares in 1990 to over 15 million hectares in 2014, of which 10 million hectors were located in Indonesia. The study suggested that this significant increase in oil palm plantations has contributed to deforestation and the loss of biodiversity in the two countries. The conversion of peat swamp forests to agricultural land is of particular concern in terms of loss of biodiversity and greenhouse gas emissions. The largest oil palm growing regions, such as Peninsular Malaysia, Borneo, and Sumatra, are estimated to have had 14.7 million hectares of peat land, but it is estimated that 3.1 million hectares of former peat land were covered by palm oil plantations by 2015 (Barthel et al., 2018). The study also reported that different degrees of similar concern could be found in other commodities, such as soybeans. The environmental aspect of agricultural production must be taken into account to balance production and environmental sustainability.

Jobs may be low value-added and unstable: While GVC participation could offer new opportunities for job creation and income growth, the quality of the employment may vary depending on the job created. In the case of oil palm cultivation, there are reported cases of poor working conditions, issues regarding the health and safety of workers, as well as gender discrimination. There is also a risk that GVC-related employment can be insecure due to the types of contracts between lead companies and local suppliers that involve NEM productions, such as contract farming, management contracts, and franchising. AJC's study on NEMs found that it is challenging to establish a long-term relationship with the TNCs, which are often the lead companies in GVCs, as they can easily terminate contracts, particularly when the quality of services or goods does not meet their standards. An unstable contractual relationship may jeopardize the stability of the jobs engaged in by the local employees. Although poor working conditions are not a unique problem to GVCs, it is indispensable for governments to take measures to minimize the risk of poor working conditions when participating in GVCs.

In order to effectively participate in agribusiness GVCs, ASEAN should aim to improve the enabling environment to promote trade and attract FDI in agribusiness, which links local producers to global supply chains and triggers technology transfer and improved productivity. It is also essential to enhance the absorption capacities of local food producers, including smallholder farmers and SMEs, in order to realize the technology spillovers. Furthermore, to ensure the quality of FDI and NEM for sustainable development, governments should promote responsible investment in agriculture by supporting international practices, such as the Principles of Responsible Agricultural Investment (PRAI).

The goal of being part of GVCs is to increase the production volume, particularly for exports, and value addition in trade, which contribute to a country's economic growth and sustainable development. To increase the trade volume of agriculture and food products, it is essential to improve productivity by adopting more sophisticated inputs and improving production methods. Producing higher value-added products, especially processed food, is also a high priority for many ASEAN countries.

To achieve these goals, it is important to **enhance the trade and investment enabling environment** to promote trade and attract FDI, which links local producers to global supply chains, triggers technology transfer, and improves productivities. At the same time, governments should give support to **improve the absorption capacities of local food producers**, including smallholder farmers and SMEs, in order to realize the transfer of technology and know-how. Furthermore, to ensure the quality of FDI for sustainable development, governments should promote responsible investment by supporting international practices, such as the PRAI.

Box 6. **Principles of Responsible Agricultural Investment**

The Principles of Responsible Agricultural Investment (PRAI) for respecting rights, livelihoods, and resources were jointly developed by UNCTAD, the FAO, IFAD, and the World Bank following the adoption of the multi-year action plan on development at the G20 Seoul Summit in 2010.

"The seven Principles cover all types of investment in agriculture, including between principal investors and contract farmers. In many cases, no purchase of land or concessions are involved. Where this does occur, the principles cover both large and small holdings. The Principles are based on detailed research on the nature, extent and impacts of private sector investment and best practices in law and policy. They are intended to distil the lessons learned and provide a framework for national regulations, international investment agreements, global corporate social responsibility initiatives, and individual investor contracts.

The Principles comprise the following:

- Principle 1: Existing rights to land and associated natural resources are recognized and respected.
- Principle 2: Investments do not jeopardize food security but rather strengthen it.
- Principle 3: Processes relating to investment in agriculture are transparent, monitored, and ensure accountability by all stakeholders, within a proper business, legal, and regulatory environment.
- Principle 4: All those materially affected are consulted, and agreements from consultations are recorded and enforced.

.../

Box 6. **Principles of Responsible Agricultural Investment** (Concluded)

- Principle 5: Investors ensure that projects respect the rule of law, reflect industry best practice, are viable economically, and result in durable shared value.
- Principle 6: Investments generate desirable social and distributional impacts and do not increase vulnerability.
- Principle 7: Environmental impacts of a project are quantified and measures taken to encourage sustainable resource use, while minimizing the risk/magnitude of negative impacts and mitigating them.

The PRAI have been strongly advocated and supported by the Government of Japan.

In addition to the PRAI, the Committee on World Food Security, led by the FAO, IFAD, and the World Food Programme, has developed the Principles for Responsible Investment in Agriculture and Food Systems, to provide added value through a multi-stakeholder, holistic, and consensus-driven approach that fosters global ownership and application.

Source: UNCTAD website (https://unctad.org/en/Pages/DIAE/G-20/PRAI.aspx) and FAO website (http://www.fao.org/cfs/home/activities/rai/en/).

In this regard, the following recommendations can be considered (Figure 26).

Enhance the trade and investment enabling environment

- Recommendation 1: Remove non-tariff measures (NTMs) of trade
- Recommendation 2: Promote services sectors as a catalyst to enhance agribusiness
- Recommendation 3: Accelerate infrastructure development for agriculture

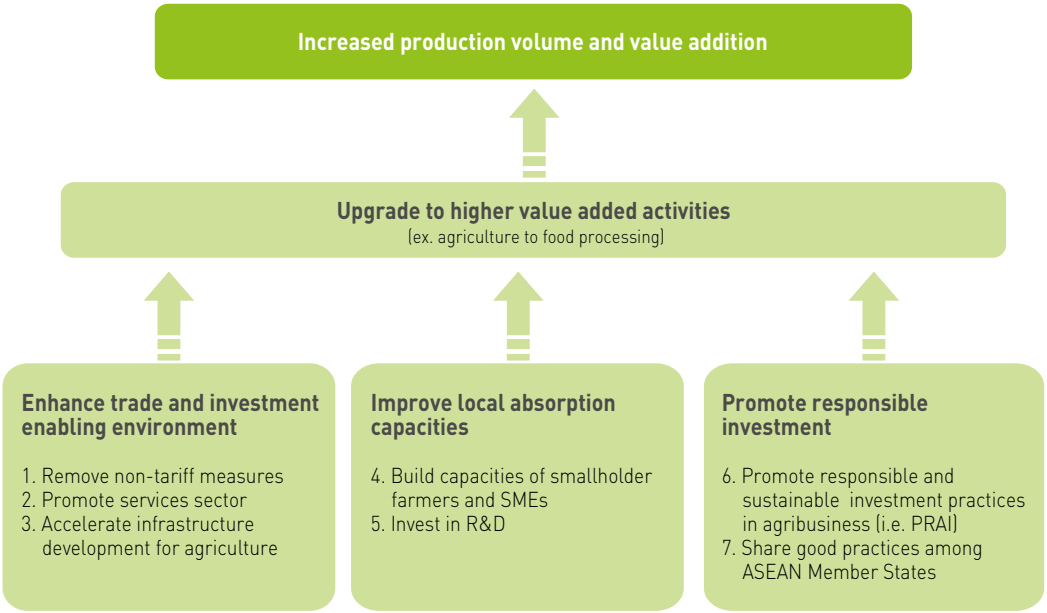
Improve local absorption capacities

- Recommendation 4: Build capacities of smallholder farmers and SMEs
- Recommendation 5: Invest in R&D

Promote responsible investment

- Recommendation 6: Promote responsible and sustainable investment practices in agriculture (i.e., PRAI)
- Recommendation 7: Share good practices among ASEAN Member States

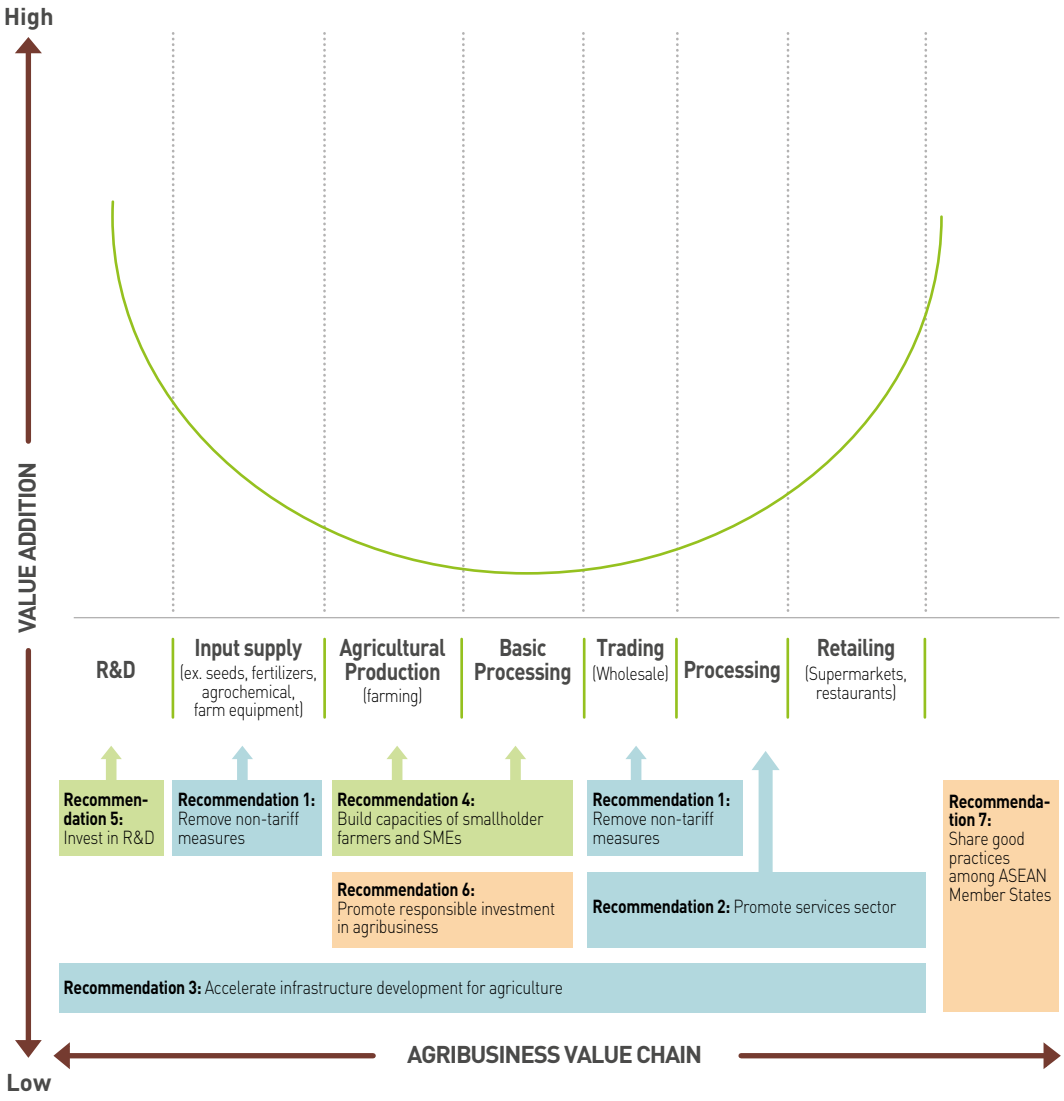
Figure 26. **Policy recommendations to increase production volume and value addition**



Source: AJC.

The relation of the policy recommendations to the agribusiness GVC is shown in Figure 27.

Figure 27. **Policy recommendations along the agribusiness GVCs**



Source: AJC.

Enhance the trade and investment enabling environment

Recommendation 1: Remove non-tariff measures (NTMs) of trade

1. Review and revise, as far as possible, the trade barriers and domestic measures on agricultural and food products, including import restrictions, price support, and subsidies related to production quantities. The agriculture market is often more distorted than many other industries, and products face higher trade barriers, such as tariffs and quotas. There are also some NTMs, such as sanitary and phytosanitary (SPS) and technical barriers to trade (TBT) measures. Agricultural markets in many countries are also subject to greater levels of government intervention, such as through direct budgetary payments or regulated marketing channels and price controls (OECD-FAO, 2017:12). The import barriers placed on agro-food products can limit the domestic returns available from participation in agro-food GVCs (OECD-FAO, 2017: 75).
2. Actively engage in trade liberalization at the multilateral level, including through WTO negotiation, to promote the global free flow of agricultural and food products. According to the OECD and the FAO, the multilateral reforms should provide greater opportunities within the region for their agricultural sectors, ultimately helping to increase incomes in rural communities connected with agriculture and improve food security (OECD-FAO, 2017: 73).
3. Further enhance efforts to promote trade facilitation among ASEAN countries. One study estimated that each day of delay reduces the value of traded perishable goods by 6% (ERIA, 2016: 104). It is thus essential to accelerate trade facilitation in ASEAN, including through the operationalization of the ASEAN Trade Facilitation Framework.

This policy recommendation is especially relevant for the inputs of supply and trading in the agribusiness value chain (Figure 27).

Recommendation 2: Promote the services sector as a catalyst for enhancing agribusiness

1. Promote policies that enhance the competitiveness of the services sector, such as wholesale and retail; transport and storage, including cold transport and storage; and logistics, as well as restaurants and hotels. The services sector is an important determinant of agribusiness production and export costs. The vibrant services sector could be a catalyst to enhance agribusiness in ASEAN and its participation in GVCs.
2. Review the services-trade restrictive measures in the key sectors mentioned above and examine the impact of such restrictive measures on agribusiness. Several studies have found that services-trade restrictions would have negative influences on GVC engagement and decrease the domestic value-added generated for countries with high levels of restrictions (Greenville, Kawasaki and Beaujeu, 2017:8). It is thus essential to identify the key restrictive measures in services and address them to facilitate the development of key industries, including agribusiness.

This policy recommendation is relevant in the later stages of the value chain, especially for trading, processing, and retailing. Services such as logistics and transportation play a critical role in enhancing agribusiness trade and, thus, connecting into agribusiness GVCs (Figure 27).

Recommendation 3: Accelerate infrastructure development for agriculture

1. Continue to promote infrastructure development, especially rural infrastructure, such as irrigation, storage facilities, roads, and ports, to facilitate the trade of agro-food products. It is also important to continue to develop basic infrastructure, such as electricity and water supply, as part of creating an enabling investment environment.

2. The development of agro-industrial zones, accommodated by policies to support agribusiness, could also be a useful way to help industrial clustering and attract FDI. For example, the Philippines developed 21 agro-industrial economic zones, which have the support facilities and services required for processing and agro-based manufacturing activities, using local agricultural and marine products as basic raw materials (ASEAN Secretariat and UNCTAD, 2017). Such development of agro-industrial parks not only attracts FDI but also increases the export competitiveness of agro-food products.

This policy recommendation relates to the whole value chain, from R&D to retailing, since infrastructure is a prerequisite of the whole process from agricultural production to trade (Figure 27).

Improve local absorption capacities

Recommendation 4: Build the capacities of smallholder farmers and SMEs

1. Improve access to education, training, and capacity building for smallholder farmers, SMEs, cooperatives, associations, and producer organizations to increase their productive capacities. The capacity-building activities may include efficient agricultural production, food safety and quality management, and compliance with private/voluntary standards, to name a few. The absorption capacities of FDI are the key to allowing technology transfer to take place. Training programmes should also be provided to enable food producers to make better production (OECD, 2017).
2. Support the organization of cooperatives and associations by smallholder farmers to increase their productivity and bargaining power. According to the IFC, only about 13% of Asian farmers are members of agricultural cooperatives (IFC, 2013). By forming agricultural cooperatives, ASEAN farmers could improve market access through collective bargaining as well as improve their production capacities by jointly owning agricultural facilities and equipment. While empowering cooperatives to have more capacities is also a challenge in many ASEAN countries, it is an important first step for organizing cooperatives and associations.

This policy recommendation is important for agricultural production and the basic processing part of the value chain. Although the value addition at this stage is limited compared to R&D and retailing, this recommendation could bring the biggest impact in terms of inclusive and sustainable growth, given the prominence of the small farmers and SMEs in ASEAN (Figure 27).

Recommendation 5: Invest in R&D

1. Promote innovative technologies and practices, including through technical assistance and farmer-to-farmer skills-sharing, to enhance productive capacities. It is important to invest in an R&D and innovation system to increase agricultural outputs. Technical upgrading also prepares ASEAN countries to better deal with TBT/SPS measures and increase agricultural and food exports.
2. Encourage foreign TNCs to make extension and advisory services an integral part of their investment, which will contribute to improving the quality and quantity of agricultural production in ASEAN.
3. Strengthen the work of R&D, following Strategic Thrust 4 of the ASEAN Integrated Food Security (AIFS) Framework and Strategic Plan of Action of Food Security in the ASEAN Region (SPA-FS) 2015-2020 to promote sustainable food production.

Promote responsible investment

Recommendation 6: Promote responsible and sustainable investment practices in agriculture

1. Promote responsible investment in agribusiness using international frameworks, such as the Principles for Responsible Agricultural Investment that Respects Rights, Livelihoods and Resources (PRAI) and the Principles for Responsible Investment in Agriculture and Food Systems, as guidelines. Take these principles into consideration when developing or adapting investment policies, laws, and regulations (see Box 6 and Box 7).

This policy recommendation relates to the production and processing part of the value chain, as it is closely linked to how agricultural production should be done to ensure the responsibility of the food producers (Figure 27).

Recommendation 7: Share good practices among ASEAN Member States

1. Strengthen experience sharing and discussions on the good practices and lessons learned among ASEAN Member States to promote trade and investment in agribusiness. Compile successful case stories on participating in agribusiness GVCs, which could provide useful insights for policy makers in ASEAN to design policies.
2. Create international fora as part of other related ASEAN meetings on agriculture to discuss GVCs. AJC could provide a platform for ASEAN Member States to share their experiences and lessons learned on promoting trade and investment in agribusiness, as well as the challenges they have faced when participating in GVCs. AJC could also invite experts from Japan and ASEAN Member States to stimulate dialogue on how policies could maximize the opportunities of GVCs.

This policy recommendation does not link directly to a specific process in the value chain, but could be considered as a way to upgrade ASEAN's agribusiness through enhanced regional cooperation (Figure 27).

Box 7. **Good practices: Nestlé Responsible Sourcing Standard**

Nestlé, the world's largest food and beverage company, launched the Nestlé Responsible Sourcing Standard in July 2018, which defines the requirements and ways of working that are applied to the upstream supply chain third parties to ensure sustainability and respect for individual communities and the planet. The standard sets forth requirements for upstream supply chain third parties through the first-tier suppliers (co-manufacturers of Nestlé), sub-tier suppliers (intermediaries), and original services providers, such as farms. The requirements are classified as either "urgent" or "important", which provides the timeframe of implementation.

The standard covers extensive areas, including the working conditions (such as freedom from forced labour; freedom of association and collective bargaining; minimum age for employment; working time and rest days; safety and health; and the workplace environment), environmental protection (nature conservancy; plastic package stewardship; water and air quality; forest management; and biodiversity management), gender and women empowerment, territorial management, ethics (grievance mechanisms and conflict of interest) and agricultural practices (soil health; agrochemicals; GMO; energy management; and animal welfare and aquaculture). It has five executive summary principals:

1. Nestlé staff sources with care and respect for the people, planet, and oceans where materials and services are produced.
2. Tier 1 suppliers apply good labour standards in recruiting, compensating, and caring about their workforce. Preserving natural resources and conducting business in an ethical and collaborative way is ensured.
3. Intermediaries operate with the same principles of value, transparency, and respect as their suppliers and clients, nurturing traceability and preserving information.
4. Origins, farmers and fishers, continuously improve their ways of working in:
   - Optimizing yield through conservative agriculture, preservation of soil biome and rationalization of agrochemical inputs, and
   - Caring and respecting the workforce, animals, land, water and forests that they work with.
5. Supply chain tiers work in compliance with the applicable regulations, continuously monitor, disclose, and improve against the standard.

The implementation of the standards contributes to the implementation of Nestlé's commitment to the OECD Guidelines for Multinational Enterprises, the Core Conventions of ILO, and the United Nations Sustainable Development Goals.

Source: Nestlé Responsible Sourcing Standard.

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ANNEX TABLES

Annex table 1. **Value added exports of agribusiness from ASEAN, by value added creator, 1990–2015**
(Millions of dollars)

		Exports from ASEAN					
	Value added creator	1990	1995	2000	2005	2010	2015
Foreign value added (FVA)	**World**	2 296	5 562	6 122	11 029	18 603	20 347
	Developed countries	1 402	3 391	3 482	5 876	9 294	9 334
	Europe	503	1 206	1 225	2 283	3 549	3 572
	European Union	455	1 082	1 110	2 077	3 160	3 172
	Austria	8	18	19	39	61	62
	Belgium	27	73	66	132	187	207
	Denmark	13	27	27	47	71	76
	Finland	8	19	20	38	56	57
	France	62	149	147	284	435	429
	Germany	117	270	269	523	833	719
	Ireland	7	15	20	43	64	75
	Italy	46	102	103	195	290	294
	Netherlands	46	131	124	204	323	342
	Spain	16	41	39	93	132	145
	Sweden	26	46	36	68	108	114
	United Kingdom	61	153	193	309	429	481
	Other developed Europe	48	123	116	206	389	400
	Norway	18	50	55	95	175	160
	Switzerland	27	69	56	102	200	226
	North America	356	919	1 058	1 511	2 346	2 391
	Canada	38	84	121	202	322	347
	United States	318	835	937	1 309	2 024	2 044
	Other developed countries	543	1 266	1 198	2 082	3 399	3 372
	Australia	126	322	331	603	1 061	1 218
	Japan	383	859	775	1 311	2 030	1 798
	New Zealand	27	69	72	137	249	290
	Developing countries	857	2 117	2 581	4 995	8 973	10 626
	Africa	30	77	92	177	321	310
	Algeria	2	5	8	17	33	31
	Nigeria	2	4	6	12	21	26
	South Africa	9	36	36	71	116	114
	South America	36	107	125	216	448	453
	Argentina	9	30	35	48	108	109
	Brazil	9	23	26	56	118	119
	Venezuela	6	17	20	32	90	85
	Caribbean	2	4	7	11	21	21
	Asia	781	1 908	2 328	4 544	8 101	9 754
	West Asia	94	178	222	477	666	804
	Kuwait	7	22	32	86	93	116
	Qatar	2	6	10	26	50	68
	Saudi Arabia	38	61	67	116	165	194
	United Arab Emirates	26	38	45	115	147	202
	South, East and South-east Asia	687	1 730	2 106	4 067	7 435	8 950
	China	105	405	419	1 102	2 264	3 015
	Hong Kong, China	21	64	74	103	127	170
	Korea, Republic of	54	119	161	329	497	584
	Taiwan Province of China	170	167	254	247	260	232
	India	25	93	127	289	628	731
	Iran, Islamic Republic of	13	31	34	68	105	127
	ASEAN	293	838	1 019	1 904	3 502	4 035
	Brunei Darussalam	4	7	8	20	27	32
	Cambodia	1	5	8	10	16	17
	Indonesia	76	290	292	552	1 113	1 306
	Lao People's Democratic Republic	1	2	3	7	14	16
	Malaysia	84	154	224	433	722	856
	Myanmar	11	22	58	56	109	138
	Philippines	13	45	43	95	200	227
	Singapore	50	147	166	322	706	760
	Thailand	39	136	165	328	534	610
	Viet Nam	13	31	53	82	59	72
	Oceania	2	5	5	8	16	18
	Transition economies	37	54	60	159	336	386
	Russian Federation	29	43	46	126	272	322
Domestic value added (DVA)		10 397	19 539	23 649	39 202	67 046	82 105
Gross exports		12 693	25 101	29 771	50 232	85 649	102 451

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Annex table 2-1. **Value added exports of agribusiness from ASEAN, by value added creator, 1990** (Millions of dollars)

	Value added creator	Agribusiness exports from ASEAN			
		Brunei Darussalam	Cambodia	Indonesia	Lao People's Democratic Republic
Foreign value added (FVA)	**World**	1	0	93	1
	Developed countries	0	0	63	0
	Europe	0	0	18	0
	European Union	0	0	17	0
	Austria	0	0	0	0
	Belgium	0	0	1	0
	Denmark	0	0	0	0
	Finland	0	0	0	0
	France	0	0	2	0
	Germany	0	0	5	0
	Ireland	0	0	0	0
	Italy	0	0	1	0
	Netherlands	0	0	2	0
	Spain	0	0	1	0
	Sweden	0	0	1	0
	United Kingdom	0	0	2	0
	Other developed Europe	0	0	1	0
	Norway	0	0	0	0
	Switzerland	0	0	1	0
	North America	0	0	18	0
	Canada	0	0	2	0
	United States	0	0	16	0
	Other developed countries	0	0	27	0
	Australia	0	0	9	0
	Japan	0	0	18	0
	New Zealand	0	0	1	0
	Developing countries	1	0	29	0
	Africa	0	0	1	0
	Algeria	0	0	0	0
	Nigeria	0	0	0	0
	South Africa	0	0	0	0
	South America	0	0	1	0
	Argentina	0	0	0	0
	Brazil	0	0	1	0
	Venezuela	0	0	0	0
	Caribbean	0	0	0	0
	Asia	0	0	26	0
	West Asia	0	0	4	0
	Kuwait	0	0	1	0
	Qatar	0	0	0	0
	Saudi Arabia	0	0	2	0
	United Arab Emirates	0	0	0	0
	South, East and South-east Asia	0	0	22	0
	China	0	0	4	0
	Hong Kong, China	0	0	1	0
	Korea, Republic of	0	0	3	0
	Taiwan Province of China	0	0	5	0
	India	0	0	1	0
	Iran, Islamic Republic of	0	0	0	0
	ASEAN	0	0	9	0
	Brunei Darussalam	-	0	0	0
	Cambodia	0	-	0	0
	Indonesia	0	0	-	0
	Lao People's Democratic Republic	0	0	0	-
	Malaysia	0	0	2	0
	Myanmar	0	0	0	0
	Philippines	0	0	1	0
	Singapore	0	0	4	0
	Thailand	0	0	2	0
	Viet Nam	0	0	1	0
	Oceania	0	0	0	0
	Transition economies	0	0	1	0
	Russian Federation	0	0	1	0
Domestic value added (DVA)		2	13	1 749	27
Gross exports		3	13	1 842	27

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Agribusiness exports from ASEAN

Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
630	19	50	511	747	244
417	7	28	311	487	88
135	4	8	110	198	29
126	3	8	102	173	26
2	0	0	2	3	0
8	0	0	6	11	2
2	0	0	5	5	1
2	0	0	2	3	0
17	0	1	15	22	5
32	0	2	23	49	6
1	0	0	1	4	0
12	0	1	12	16	3
14	0	1	12	15	2
4	0	0	4	6	1
8	0	0	4	11	1
19	1	1	14	19	4
9	0	1	8	25	2
3	0	0	3	10	1
6	0	0	5	13	1
108	1	9	97	102	20
8	0	1	8	18	2
100	1	9	89	85	19
174	2	10	104	186	39
46	1	2	34	29	4
115	1	7	62	146	34
12	0	0	7	7	1
206	11	22	196	242	150
6	2	1	6	11	3
1	0	0	0	1	0
0	0	0	0	1	0
2	0	0	2	3	1
11	1	1	8	11	2
4	0	0	2	2	0
3	0	0	2	2	0
2	0	0	1	2	1
0	0	0	1	1	0
187	7	20	179	216	144
19	1	3	11	51	5
2	0	0	1	2	1
0	0	0	0	1	0
9	0	1	5	18	2
3	0	1	2	18	1
169	7	17	167	165	138
26	0	2	18	28	27
7	0	1	4	5	3
12	0	2	7	18	12
33	4	5	17	46	60
8	0	0	7	7	1
2	0	1	2	6	1
79	1	5	111	53	34
0	0	0	0	4	0
0	0	0	0	0	0
25	0	2	29	12	8
0	0	0	0	1	0
-	0	1	62	16	3
3	-	0	4	4	0
4	0	-	3	2	3
26	0	2	-	8	10
17	0	1	10	-	8
3	0	0	3	5	-
0	0	0	0	1	0
6	1	1	4	18	6
5	0	1	3	15	5
1 772	310	721	403	4 446	953
2 401	329	771	914	5 193	1 198

Annex table 2-2. **Value added exports of agribusiness from ASEAN, by value added creator, 1995** (Millions of dollars)

	Value added creator	Agribusiness exports from ASEAN			
		Brunei Darussalam	Cambodia	Indonesia	Lao People's Democratic Republic
Foreign value added (FVA)	**World**	1	11	244	2
	Developed countries	0	4	159	1
	Europe	0	2	45	0
	European Union	0	2	41	0
	Austria	0	0	1	0
	Belgium	0	0	3	0
	Denmark	0	0	1	0
	Finland	0	0	1	0
	France	0	1	6	0
	Germany	0	0	11	0
	Ireland	0	0	0	0
	Italy	0	0	3	0
	Netherlands	0	0	5	0
	Spain	0	0	2	0
	Sweden	0	0	2	0
	United Kingdom	0	0	5	0
	Other developed Europe	0	0	4	0
	Norway	0	0	1	0
	Switzerland	0	0	2	0
	North America	0	1	48	0
	Canada	0	0	5	0
	United States	0	1	43	0
	Other developed countries	0	1	66	0
	Australia	0	0	24	0
	Japan	0	1	40	0
	New Zealand	0	0	1	0
	Developing countries	0	6	84	1
	Africa	0	0	3	0
	Algeria	0	0	0	0
	Nigeria	0	0	1	0
	South Africa	0	0	1	0
	South America	0	0	4	0
	Argentina	0	0	1	0
	Brazil	0	0	2	0
	Venezuela	0	0	1	0
	Caribbean	0	0	0	0
	Asia	0	6	76	1
	West Asia	0	0	9	0
	Kuwait	0	0	2	0
	Qatar	0	0	0	0
	Saudi Arabia	0	0	5	0
	United Arab Emirates	0	0	1	0
	South, East and South-east Asia	0	6	67	1
	China	0	1	20	0
	Hong Kong, China	0	0	2	0
	Korea, Republic of	0	0	8	0
	Taiwan Province of China	0	1	6	0
	India	0	0	3	0
	Iran, Islamic Republic of	0	0	1	0
	ASEAN	0	4	27	1
	Brunei Darussalam	-	0	0	0
	Cambodia	0	-	0	0
	Indonesia	0	1	-	0
	Lao People's Democratic Republic	0	0	0	-
	Malaysia	0	0	6	0
	Myanmar	0	0	0	0
	Philippines	0	0	2	0
	Singapore	0	1	10	0
	Thailand	0	1	6	1
	Viet Nam	0	0	3	0
	Oceania	0	0	0	0
	Transition economies	0	0	2	0
	Russian Federation	0	0	1	0
	Domestic value added (DVA)	2	80	4 264	58
	Gross exports	3	91	4 508	60

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Agribusiness exports from ASEAN

Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2 155	3	141	1 105	1 399	501
1 384	2	78	673	894	197
475	1	24	233	375	51
438	1	21	213	320	46
6	0	0	4	6	1
31	0	1	13	20	3
8	0	0	8	8	1
8	0	1	3	6	1
59	0	3	32	40	9
106	0	5	47	89	11
5	0	0	2	7	0
39	0	2	23	30	4
63	0	3	27	29	4
17	0	1	8	12	2
18	0	1	7	17	1
65	0	3	32	40	7
37	0	2	20	55	5
13	0	1	6	27	2
24	0	1	13	25	3
374	0	28	223	208	37
28	0	1	16	30	3
346	0	26	207	177	34
535	0	27	217	311	109
159	0	6	73	55	6
333	0	20	128	236	101
39	0	1	14	13	1
758	2	62	427	483	294
26	0	2	14	27	4
2	0	0	1	1	0
1	0	0	1	1	0
13	0	1	7	13	1
41	0	2	20	37	3
18	0	0	5	6	0
9	0	1	6	4	1
7	0	0	3	4	1
1	0	0	1	1	0
682	1	58	387	411	286
53	0	7	22	80	7
5	0	0	3	10	2
1	0	0	1	3	0
20	0	3	9	22	3
7	0	3	3	24	1
629	1	50	366	331	279
115	0	11	49	90	120
29	0	2	11	14	7
38	0	6	16	32	18
46	0	7	20	42	45
50	0	1	20	16	3
9	0	3	5	10	2
337	0	19	244	122	84
1	0	0	0	5	0
3	0	0	0	1	0
126	0	7	95	37	24
0	0	0	0	2	0
-	0	3	102	36	6
8	-	0	5	8	0
19	0	-	8	6	9
91	0	5	-	18	22
75	0	3	27	-	22
13	0	0	6	8	-
1	0	0	1	2	0
13	0	1	6	23	9
11	0	1	4	19	7
2 694	382	1 428	937	8 250	1 444
4 849	385	1 568	2 043	9 649	1 945

Annex table 2-3. **Value added exports of agribusiness from ASEAN, by value added creator, 2000** (Millions of dollars)

	Value added creator	Agribusiness exports from ASEAN			
		Brunei Darussalam	Cambodia	Indonesia	Lao People's Democratic Republic
Foreign value added (FVA)	**World**	0	18	405	4
	Developed countries	0	6	239	1
	Europe	0	3	71	1
	European Union	0	3	65	1
	Austria	0	0	2	0
	Belgium	0	0	4	0
	Denmark	0	0	2	0
	Finland	0	0	1	0
	France	0	1	9	0
	Germany	0	0	17	0
	Ireland	0	0	1	0
	Italy	0	0	5	0
	Netherlands	0	0	8	0
	Spain	0	0	2	0
	Sweden	0	0	2	0
	United Kingdom	0	0	10	0
	Other developed Europe	0	0	6	0
	Norway	0	0	2	0
	Switzerland	0	0	3	0
	North America	0	1	78	0
	Canada	0	0	11	0
	United States	0	1	68	0
	Other developed countries	0	2	89	0
	Australia	0	0	40	0
	Japan	0	1	46	0
	New Zealand	0	0	3	0
	Developing countries	0	12	162	3
	Africa	0	0	6	0
	Algeria	0	0	0	0
	Nigeria	0	0	2	0
	South Africa	0	0	2	0
	South America	0	0	7	0
	Argentina	0	0	1	0
	Brazil	0	0	3	0
	Venezuela	0	0	1	0
	Caribbean	0	0	0	0
	Asia	0	11	146	2
	West Asia	0	0	17	0
	Kuwait	0	0	4	0
	Qatar	0	0	0	0
	Saudi Arabia	0	0	8	0
	United Arab Emirates	0	0	2	0
	South, East and South-east Asia	0	11	130	2
	China	0	2	29	0
	Hong Kong, China	0	1	3	0
	Korea, Republic of	0	0	15	0
	Taiwan Province of China	0	1	13	0
	India	0	0	8	0
	Iran, Islamic Republic of	0	0	2	0
	ASEAN	0	6	59	2
	Brunei Darussalam	-	0	0	0
	Cambodia	0	-	0	0
	Indonesia	0	1	-	0
	Lao People's Democratic Republic	0	0	0	-
	Malaysia	0	1	16	0
	Myanmar	0	0	1	0
	Philippines	0	0	3	0
	Singapore	0	1	20	0
	Thailand	0	2	12	1
	Viet Nam	0	1	6	0
	Oceania	0	0	1	0
	Transition economies	0	0	4	0
	Russian Federation	0	0	3	0
Domestic value added (DVA)		4	90	5 374	54
Gross exports		4	108	5 778	58

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Agribusiness exports from ASEAN

Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
2 108	3	228	1 240	1 579	537
1 261	1	119	708	935	211
432	1	38	243	367	70
398	1	34	223	321	63
6	0	0	4	6	1
25	0	2	12	19	4
7	0	1	8	8	1
7	0	1	3	6	1
51	0	4	32	38	12
94	0	8	48	87	15
7	0	1	3	9	1
35	0	3	22	32	5
52	0	5	26	27	5
14	0	2	7	11	2
13	0	1	6	13	1
75	0	7	42	49	11
33	0	4	20	46	7
14	0	2	8	26	3
19	0	2	12	16	4
399	0	45	243	240	52
39	0	3	23	39	6
360	0	42	220	201	46
431	0	36	222	328	89
135	0	9	75	62	9
253	0	25	129	243	78
37	0	1	15	14	1
835	2	106	526	623	313
29	0	3	18	28	6
4	0	0	2	1	1
2	0	0	1	1	0
12	0	1	7	12	2
44	0	3	24	41	5
19	0	0	6	8	1
9	0	1	8	5	1
8	0	1	4	5	2
2	0	0	2	2	1
751	1	98	476	543	300
57	0	15	28	92	13
7	0	1	4	13	4
2	0	1	2	4	1
19	0	6	10	19	4
8	0	6	4	24	2
694	1	83	448	451	287
139	0	12	61	105	71
28	0	4	12	15	10
44	0	12	20	38	32
66	0	12	27	75	59
59	0	3	28	24	5
9	0	6	6	9	2
343	0	32	291	180	106
1	0	0	1	6	0
3	0	0	0	3	1
123	0	9	104	33	22
0	0	0	0	2	1
-	0	7	132	54	14
9	-	0	6	41	1
19	0	-	9	6	6
83	0	9	-	20	32
84	0	6	29	-	29
20	0	1	9	15	-
1	0	0	1	2	0
12	0	2	6	21	13
10	0	2	4	17	10
3 926	446	2 024	1 107	8 247	2 377
6 034	450	2 252	2 347	9 827	2 913

Annex table 2-4. **Value added exports of agribusiness from ASEAN, by value added creator, 2005** (Millions of dollars)

	Value added creator	Agribusiness exports from ASEAN			
		Brunei Darussalam	Cambodia	Indonesia	Lao People's Democratic Republic
Foreign value added (FVA)	**World**	1	19	663	8
	Developed countries	0	7	372	2
	Europe	0	4	121	1
	European Union	0	3	113	1
	Austria	0	0	3	0
	Belgium	0	0	7	0
	Denmark	0	0	2	0
	Finland	0	0	2	0
	France	0	1	16	0
	Germany	0	1	30	0
	Ireland	0	0	2	0
	Italy	0	0	9	0
	Netherlands	0	0	11	0
	Spain	0	0	5	0
	Sweden	0	0	3	0
	United Kingdom	0	0	15	0
	Other developed Europe	0	0	9	0
	Norway	0	0	3	0
	Switzerland	0	0	5	0
	North America	0	1	106	0
	Canada	0	0	16	0
	United States	0	1	90	0
	Other developed countries	0	2	145	1
	Australia	0	1	66	0
	Japan	0	1	74	0
	New Zealand	0	0	4	0
	Developing countries	0	12	284	5
	Africa	0	0	11	0
	Algeria	0	0	1	0
	Nigeria	0	0	3	0
	South Africa	0	0	3	0
	South America	0	0	12	0
	Argentina	0	0	1	0
	Brazil	0	0	5	0
	Venezuela	0	0	2	0
	Caribbean	0	0	1	0
	Asia	0	11	257	4
	West Asia	0	0	30	0
	Kuwait	0	0	8	0
	Qatar	0	0	1	0
	Saudi Arabia	0	0	13	0
	United Arab Emirates	0	0	4	0
	South, East and South-east Asia	0	11	227	4
	China	0	2	67	0
	Hong Kong, China	0	1	4	0
	Korea, Republic of	0	0	25	0
	Taiwan Province of China	0	1	11	0
	India	0	0	16	0
	Iran, Islamic Republic of	0	0	3	0
	ASEAN	0	6	100	3
	Brunei Darussalam	-	0	0	0
	Cambodia	0	-	0	0
	Indonesia	0	1	-	0
	Lao People's Democratic Republic	0	0	0	-
	Malaysia	0	1	26	0
	Myanmar	0	0	1	0
	Philippines	0	0	4	0
	Singapore	0	1	37	0
	Thailand	0	3	21	3
	Viet Nam	0	0	10	0
	Oceania	0	0	1	0
	Transition economies	0	0	6	0
	Russian Federation	0	0	5	0
Domestic value added (DVA)		5	115	8 930	119
Gross exports		6	134	9 593	126

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Agribusiness exports from ASEAN

Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
3 604	1	408	2 173	2 966	1 186
2 016	1	204	1 140	1 623	510
768	0	67	441	743	138
713	0	61	406	654	125
12	0	1	8	13	3
47	0	4	24	42	8
12	0	1	14	16	2
13	0	2	6	13	2
95	0	7	59	83	23
177	0	15	92	179	29
13	0	1	6	21	1
64	0	5	43	61	12
82	0	6	43	51	10
33	0	4	17	29	5
24	0	2	11	25	3
114	0	10	65	85	20
55	0	6	35	88	13
22	0	3	12	50	4
32	0	3	22	32	8
561	0	74	337	338	92
59	0	5	37	73	11
502	0	69	300	266	82
687	0	64	362	541	280
238	0	17	144	118	19
377	0	41	181	378	258
64	0	2	32	32	2
1 555	1	198	1 017	1 284	639
53	0	5	35	61	12
7	0	1	3	4	2
4	0	0	2	3	1
22	0	2	14	28	3
76	0	5	37	76	9
28	0	0	5	12	1
20	0	2	14	12	2
14	0	1	6	7	3
3	0	0	2	3	1
1 409	0	185	932	1 130	615
106	0	28	53	230	29
18	0	2	9	40	10
5	0	2	4	12	2
35	0	10	17	35	7
17	0	12	9	69	5
1 302	0	157	879	900	587
332	0	34	159	303	204
39	0	6	18	20	16
94	0	21	40	82	66
56	0	15	28	78	57
125	0	6	66	63	12
22	0	13	11	13	6
625	0	61	552	332	224
2	0	0	1	16	1
5	0	0	1	2	2
220	0	17	198	71	46
0	0	0	0	5	2
-	0	15	251	112	29
7	-	0	6	41	1
40	0	-	20	16	14
158	0	15	-	45	65
164	0	12	60	-	65
29	0	2	15	25	-
1	0	0	2	3	0
33	0	5	16	60	37
27	0	4	11	49	29
6 516	419	3 626	1 709	14 373	3 389
10 120	420	4 034	3 883	17 339	4 576

Annex table 2-5. **Value added exports of agribusiness from ASEAN, by value added creator, 2010** (Millions of dollars)

	Value added creator	Agribusiness exports from ASEAN			
		Brunei Darussalam	Cambodia	Indonesia	Lao People's Democratic Republic
Foreign value added (FVA)	**World**	2	30	1 109	13
	Developed countries	1	10	587	4
	Europe	0	5	186	2
	European Union	0	5	170	2
	Austria	0	0	5	0
	Belgium	0	0	11	0
	Denmark	0	0	3	0
	Finland	0	0	3	0
	France	0	1	24	0
	Germany	0	1	47	0
	Ireland	0	0	3	0
	Italy	0	0	14	0
	Netherlands	0	0	18	0
	Spain	0	0	7	0
	Sweden	0	0	5	0
	United Kingdom	0	1	21	0
	Other developed Europe	0	0	16	0
	Norway	0	0	6	0
	Switzerland	0	0	11	0
	North America	0	2	164	1
	Canada	0	0	27	0
	United States	0	2	138	1
	Other developed countries	0	3	237	1
	Australia	0	1	110	0
	Japan	0	2	117	1
	New Zealand	0	0	8	0
	Developing countries	1	20	510	8
	Africa	0	1	21	1
	Algeria	0	0	2	0
	Nigeria	0	0	5	0
	South Africa	0	0	5	0
	South America	0	1	24	1
	Argentina	0	0	3	0
	Brazil	0	0	11	0
	Venezuela	0	0	5	0
	Caribbean	0	0	1	0
	Asia	1	18	459	7
	West Asia	0	0	48	0
	Kuwait	0	0	14	0
	Qatar	0	0	2	0
	Saudi Arabia	0	0	20	0
	United Arab Emirates	0	0	6	0
	South, East and South-east Asia	1	17	411	7
	China	0	4	137	1
	Hong Kong, China	0	1	4	0
	Korea, Republic of	0	1	36	0
	Taiwan Province of China	0	1	12	0
	India	0	1	36	0
	Iran, Islamic Republic of	0	0	5	0
	ASEAN	1	10	177	5
	Brunei Darussalam	-	0	1	0
	Cambodia	0	-	0	0
	Indonesia	0	1	-	0
	Lao People's Democratic Republic	0	0	0	-
	Malaysia	0	1	46	0
	Myanmar	0	0	2	0
	Philippines	0	0	9	0
	Singapore	0	3	79	0
	Thailand	0	4	35	4
	Viet Nam	0	0	6	0
	Oceania	0	0	1	0
	Transition economies	0	1	12	1
	Russian Federation	0	0	9	0
Domestic value added (DVA)		10	250	18 265	361
Gross exports		12	280	19 374	374

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Agribusiness exports from ASEAN

Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
6 509	2	648	3 694	4 305	2 290
3 364	1	313	1 821	2 213	981
1 265	0	98	709	1 058	226
1 156	0	87	641	896	202
20	0	2	12	18	4
70	0	6	36	52	12
19	0	2	23	22	3
21	0	2	9	17	3
153	0	10	93	118	37
309	0	25	150	252	49
19	0	2	8	30	2
100	0	7	69	81	19
137	0	8	71	74	16
48	0	5	25	38	8
41	0	3	18	36	5
166	0	13	95	104	30
109	0	11	67	162	24
41	0	5	22	95	7
67	0	6	44	56	17
922	0	112	518	472	155
104	0	8	61	103	19
818	0	104	456	369	136
1 177	0	103	594	683	601
435	0	31	272	176	36
612	0	64	248	429	558
113	0	4	65	54	5
3 072	1	324	1 839	1 972	1 226
105	0	8	65	98	23
15	0	1	6	6	3
8	0	0	3	4	2
39	0	3	22	40	6
186	0	11	74	130	21
69	0	1	9	24	2
46	0	4	29	23	5
43	0	3	16	15	8
8	0	1	5	4	2
2 747	0	301	1 675	1 717	1 175
173	0	38	83	278	45
29	0	2	14	20	14
11	0	4	7	22	5
54	0	13	24	44	11
25	0	14	12	84	7
2 574	0	263	1 592	1 438	1 130
700	0	72	322	564	463
53	0	6	23	18	22
154	0	30	65	103	108
69	0	17	32	74	54
282	0	13	141	125	30
39	0	18	17	16	10
1 258	0	106	981	525	440
3	0	0	1	21	1
8	0	0	1	3	3
480	0	32	380	124	96
0	0	0	0	10	3
-	0	23	438	163	50
16	-	0	12	77	2
90	0	-	41	29	31
364	0	31	-	81	148
272	0	17	97	-	106
23	0	2	10	17	-
3	0	1	4	6	1
74	0	11	35	119	83
61	0	9	24	102	67
11 719	1 205	6 719	3 137	22 703	2 679
18 228	1 206	7 367	6 831	27 007	4 969

Annex table 2-6. **Value added exports of agribusiness from ASEAN, by value added creator, 2015** (Millions of dollars)

	Value added creator	Agribusiness exports from ASEAN			
		Brunei Darussalam	Cambodia	Indonesia	Lao People's Democratic Republic
Foreign value added (FVA)	**World**	2	30	1 266	13
	Developed countries	1	9	622	3
	Europe	0	5	195	2
	European Union	0	4	177	2
	Austria	0	0	5	0
	Belgium	0	0	12	0
	Denmark	0	0	3	0
	Finland	0	0	3	0
	France	0	1	25	0
	Germany	0	1	43	0
	Ireland	0	0	3	0
	Italy	0	0	15	0
	Netherlands	0	0	19	0
	Spain	0	0	8	0
	Sweden	0	0	6	0
	United Kingdom	0	1	23	0
	Other developed Europe	0	0	18	0
	Norway	0	0	5	0
	Switzerland	0	0	13	0
	North America	0	1	179	1
	Canada	0	0	30	0
	United States	0	1	149	0
	Other developed countries	0	2	248	1
	Australia	0	1	128	0
	Japan	0	1	109	0
	New Zealand	0	0	10	0
	Developing countries	1	20	629	9
	Africa	0	1	21	1
	Algeria	0	0	2	0
	Nigeria	0	0	5	0
	South Africa	0	0	5	0
	South America	0	1	26	0
	Argentina	0	0	3	0
	Brazil	0	0	11	0
	Venezuela	0	0	5	0
	Caribbean	0	0	1	0
	Asia	1	19	576	8
	West Asia	0	0	61	0
	Kuwait	0	0	18	0
	Qatar	0	0	2	0
	Saudi Arabia	0	0	24	0
	United Arab Emirates	0	0	8	0
	South, East and South-east Asia	1	18	515	7
	China	0	5	188	1
	Hong Kong, China	0	1	6	0
	Korea, Republic of	0	1	45	0
	Taiwan Province of China	0	1	12	0
	India	0	1	44	0
	Iran, Islamic Republic of	0	0	6	0
	ASEAN	1	10	210	5
	Brunei Darussalam	-	0	1	0
	Cambodia	0	-	0	0
	Indonesia	0	1	-	0
	Lao People's Democratic Republic	0	0	0	-
	Malaysia	0	1	55	0
	Myanmar	0	0	2	0
	Philippines	0	0	11	0
	Singapore	0	3	90	0
	Thailand	0	4	43	4
	Viet Nam	0	1	8	0
	Oceania	0	0	1	0
	Transition economies	0	1	15	1
	Russian Federation	0	0	11	0
Domestic value added (DVA)		11	330	22 516	487
Gross exports		13	360	23 782	500

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.

Note: All values are estimated. The region/country refers to that to which the value added is attributed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

Agribusiness exports from ASEAN

Malaysia	Myanmar	Philippines	Singapore	Thailand	Viet Nam
6 923	2	659	4 275	4 905	2 271
3 303	1	290	1 969	2 309	827
1 235	0	90	757	1 093	194
1 124	0	80	681	932	172
19	0	1	13	19	4
76	0	6	42	60	12
19	0	2	25	24	3
20	0	2	10	18	3
145	0	9	96	122	31
262	0	19	135	224	34
22	0	2	10	36	2
97	0	7	73	85	17
140	0	7	80	81	14
50	0	5	29	44	8
42	0	2	20	40	4
179	0	13	112	123	29
111	0	10	76	161	23
37	0	4	21	87	5
73	0	6	53	64	17
915	0	107	552	505	131
106	0	8	69	116	17
809	0	98	483	389	114
1 152	0	94	661	711	502
479	0	33	336	204	37
531	0	52	234	411	458
125	0	4	81	67	5
3 537	1	357	2 267	2 451	1 354
97	0	7	65	99	20
14	0	1	6	6	3
9	0	1	4	5	2
37	0	3	22	41	5
183	0	10	78	137	18
69	0	1	10	25	2
44	0	4	31	24	4
40	0	3	16	14	7
8	0	1	5	4	2
3 222	0	336	2 097	2 186	1 310
200	0	44	103	346	50
36	0	3	19	25	15
15	0	5	10	30	6
62	0	14	30	53	11
34	0	17	17	117	8
3 022	0	292	1 994	1 840	1 260
930	0	89	432	803	567
70	0	8	33	27	26
176	0	33	81	128	120
61	0	16	30	68	45
318	0	14	174	149	32
48	0	19	23	19	11
1 399	0	112	1 210	631	457
4	0	0	2	25	1
8	0	0	2	4	3
544	0	35	474	150	102
0	0	0	0	12	3
-	0	24	533	194	50
19	-	0	17	97	2
99	0	-	49	35	33
395	0	31	-	93	147
303	0	19	121	-	115
27	0	2	13	22	-
3	0	1	5	7	0
83	0	12	40	145	90
70	0	10	29	127	75
13 909	1 892	7 945	3 523	27 654	3 837
20 832	1 894	8 604	7 798	32 560	6 109

Annex table 3. **ASEAN's value added exports of agribusiness incorporated in other countries' exports, by region/country, 1990–2015** (Millions of dollars)

Region/country	DVX from ASEAN					
	1990	1995	2000	2005	2010	2015
World	1 833	3 733	5 276	9 799	17 866	19 614
Developed countries	1 168	2 245	3 229	5 830	9 959	10 744
Europe	928	1 778	2 473	4 579	8 079	8 610
European Union	907	1 738	2 420	4 474	7 894	8 420
Austria	21	36	49	104	171	180
Belgium	116	200	247	463	781	866
Denmark	42	81	109	192	326	355
Finland	8	19	27	52	89	92
France	76	127	191	320	508	560
Germany	187	353	503	1 018	1 910	1 831
Ireland	7	18	35	64	115	117
Italy	58	113	166	304	526	570
Netherlands	256	514	655	1 153	2 075	2 387
Spain	24	58	88	170	265	301
Sweden	22	38	68	96	154	166
United Kingdom	48	100	147	263	474	432
Other developed Europe	20	40	53	105	185	190
Norway	9	17	23	35	62	63
Switzerland	10	21	28	66	117	120
North America	110	248	435	642	969	1 055
Canada	49	116	189	318	475	520
United States	61	132	246	323	494	535
Other developed countries	130	219	321	610	911	1 080
Australia	19	55	82	131	198	240
Japan	99	142	202	418	604	723
New Zealand	5	11	17	28	52	56
Developing countries	646	1 464	2 015	3 905	7 779	8 724
Africa	16	29	36	67	123	135
Algeria	1	1	3	5	9	9
Nigeria	1	1	1	2	4	4
South Africa	3	8	13	24	46	52
South America	6	17	27	57	111	131
Argentina	1	3	5	14	30	32
Brazil	1	6	10	23	43	55
Venezuela	1	1	2	3	5	5
Caribbean	3	4	5	8	12	14
Asia	613	1 387	1 884	3 675	7 374	8 278
West Asia	24	51	60	112	224	261
Kuwait	2	2	2	5	10	12
Qatar	1	1	1	2	3	3
Saudi Arabia	10	18	19	30	61	63
United Arab Emirates	5	14	14	31	64	82
South, East and South-east Asia	589	1 335	1 824	3 563	7 150	8 017
China	22	125	279	855	1 976	2 050
Hong Kong, China	56	117	127	276	529	599
Korea, Republic of	69	108	192	395	1 093	1 297
Taiwan Province of China	135	140	167	149	170	166
India	4	12	22	68	148	189
Iran, Islamic Republic of	3	4	6	12	21	29
ASEAN	291	814	1 013	1 779	3 156	3 618
Brunei Darussalam	6	4	3	6	14	17
Cambodia	0	2	3	5	8	9
Indonesia	12	30	64	80	111	132
Lao People's Democratic Republic	0	1	1	2	3	3
Malaysia	72	319	365	589	1 049	1 130
Myanmar	1	0	0	0	0	0
Philippines	19	72	68	86	128	134
Singapore	129	282	353	677	1 323	1 579
Thailand	48	94	142	302	469	562
Viet Nam	4	10	16	32	51	52
Oceania	3	3	3	4	9	9
Transition economies	18	24	33	64	128	146
Russian Federation	7	10	18	31	60	71

Source: AJC-UNCTAD-Eora database on ASEAN GVCs.
Note: All values are estimated. The value refers to that incorporated in exports from the countries listed. For the definition of agribusiness, see box 1. For the GVC terminology, see box 2.

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